

EXHIBIT C

2023-06-28 [008] Patent Owner's Preliminary
Response for '783 Patent (IPR2023-00634)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MASIMO CORPORATION,

Petitioner,

v.

APPLE INC.,

Patent Owner

Case IPR2023-00634

U.S. Patent 10,627,783

PATENT OWNER PRELIMINARY RESPONSE

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PATENT OWNER'S LISTING OF EXHIBITS

Ex. 2001	U.S. Patent Pub. No. 2014/0107493 to Yuen et al. (“Yuen”)
Ex. 2002	U.S. Patent Pub. No. 2016/0103985 to Shim et al. (“Shim”)
Ex. 2003	U.S. Patent Pub. No. 2017/0011210 to Cheong et al. (“Cheong”)
Ex. 2004	U.S. Patent No. 7,946,758 to Mooring (“Mooring”)
Ex. 2005	U.S. Patent Pub. No. 2014/0139486 to Mistry et al. (“Mistry”)
Ex. 2006	U.S. Patent No. 8,229,535 to Mensinger et al. (“Mensing”)
Ex. 2007	U.S. Patent No. 7,682,070 to Burton (“Burton”)
Ex. 2008	U.S. Patent Pub. No. 2007/0228404 to Tran et al. (“Tran”)
Ex. 2009	U.S. Patent Pub. No. 2005/0274971 to Wang et al. (“Wang”)
Ex. 2010	U.S. Prov. App. No. 61/943,004 (“Cheong Provisional”)
Ex. 2011	File History of U.S. Patent App. No. 17/188,995
Ex. 2012	File History of U.S. Patent App. No. 17/951,973
Ex. 2013	File History of U.S. Patent App. No. 18/075,253
Ex. 2014	File History of U.S. Patent App. No. 18/119,175
Ex. 2015	U.S. Patent Pub. No. 2010/0193804 to Brown et al. (“Brown”)
Ex. 2016	U.S. Patent Pub. No. 2005/0030518 to Nishi et al. (“Nishi”)

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Ex. 2017 U.S. Patent No. 7,455,423 to Takenaka (“Takenaka”)

Ex. 2018 File History of Shim (Ex. 2002), with Korean priority document—KR Patent Application 10-2269797B1—included therein at pages 203-348 (“Shim File History”)

I. INTRODUCTION

The Petition should be denied under 35 U.S.C. § 325(d) because the grounds presented therein, particularly as they relate to the independent claims of U.S. Patent No. 10,627,783 (the “’783 Patent”)¹, rely upon references that are cumulative of the art of record and suffer from the same deficiencies. Among these deficiencies is the failure of these references, like the art of record, to disclose or suggest the specific configuration of the device recited in the independent claims.

In more detail, the ’783 Patent sought to improve on portable devices, particularly wearable devices (e.g., wristwatches), that had traditionally included “relatively limited functionality” or “were only able to perform a specialized set of functions or tasks.” Ex. 1001, 1:32-36. To that end, the ’783 Patent provides a wearable electronic device with an enhanced feature set—including, among other

¹ Although the Petition implicates additional claims beyond the independent claims of the ’783 Patent, Petitioner confined its argument under § 325(d) exclusively to the independent claims. *See* Petition, 109-110 (contending that “references presented herein ... disclose ... the independent claims” and “references considered during examination did not disclose ... the independent claims”).

features, “touch input, force input, an interchangeable attachment system, health monitoring functionality, wireless power charging.” *Id.*, 1:18-25, 1:46-56. To facilitate this “wide range of functionality,” the ’783 Patent contemplates a specific assembly and configuration of components integrated into the “relatively compact space of” its wrist-worn device. *Id.*, 1:39-56. This includes providing a wireless charging component (e.g., a wireless charging receive coil) and a “biosensor module” behind a cover/opening in the rear portion of the device, with this rear cover/opening being configured to facilitate transmission of optical signals to/from the biosensor module and wireless power signals to the wireless charging receive coil. *Id.*, 2:44-64, 5:25-40, 44:41-45:28. Indeed, during prosecution, the Examiner identified this “specific arrangement and configuration of the claimed cover, opening in the [device’s] housing,” which facilitates transmission of both optical and wireless power signals, as the reason why the claims were allowable over the art of record. *See* Ex. 1002, 387, 1269; *see also* Ex. 1001, 1:18-25, 2:44-64, 40:43-53, 44:38-62, 45:18-22.

Much like the art of record, the references relied upon in the Petition, including Kotanagi, Honda, and Kateraas, generally describe devices with the capability to measure heart rate and perform wireless charging, and further describe *either* optical signal transmission *or* wireless power signal transmission charging via the rear cover/opening of a wrist-worn device. *See* §§ VI-VII *infra*.

Yet, these references suffer from the same deficiencies that the Examiner observed in the art of record—i.e., they fail to disclose or suggest the “specific arrangement and configuration of the claimed cover, opening in the housing” that facilitate **both** optical and wireless power signal transmission. *See* Ex. 1002, 387, 1269.

Petitioner nevertheless attempts to color the references presented in the Petition as “materially better than the references considered during examination” because, according to Petitioner, the references in the Petition disclose features of the independent claims, such as “wireless charging, a ceramic cover, [and] convex shapes,” which were allegedly not disclosed in the references of record. Petition, 109-110. This argument fails given the numerous references cited during prosecution that disclose or suggest these very features that Petitioner incorrectly argues as being absent from the art of record. *See* §VII *infra*. Notably, many of these references were identified by the Examiner and some were even applied by the Examiner in an office action. *See id.* Thus, on this record, Petitioner has not and cannot meet its burden of showing material error during prosecution.

In summary, the prosecution history of the ’783 Patent demonstrates that the Examiner was in possession of references that contemplated substantially the same functionality as that presented via the references identified in the Petition, and yet correctly concluded that the claims were allowable because the references of record—much like the ground references identified in the Petition—did not

disclose or suggest a rear cover/opening via which **both** wireless and optical signals would be transmitted. For these reasons and as further explained below, the Petition respectfully requests denial of the Petition under § 325(d).

II. THE INVENTION OF THE '783 PATENT

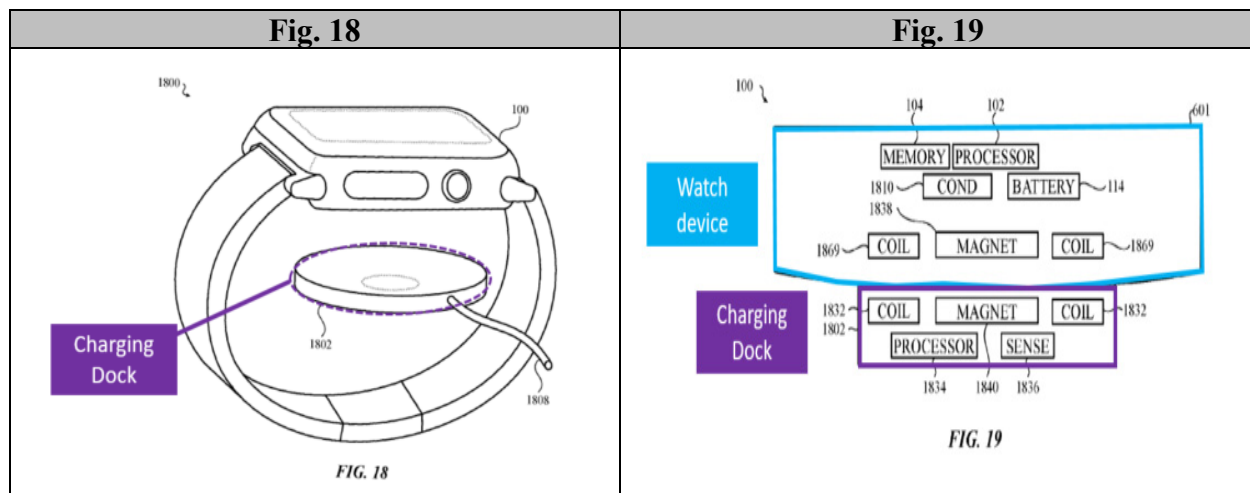
The '783 Patent relates to “a wearable electronic device” that provides a “wide range” of features, including among others, “wireless power charging” and “health monitoring functionality.” Ex. 1001, 1:19-25, 1:39-41.

The '783 Patent explains that traditional portable devices, particularly wearable electronic devices, had “relatively limited functionality or [were] only able to perform a specialized set of functions or tasks.” Ex. 1001, 1:32-36. “For example, some traditional electronic wristwatches” were “configured to perform a relatively limited set of functions, including displaying time, date, and performing basic timing functions.” *Id.*, 1:36-39.

In contrast, and “compared to some traditional wearable electronic devices,” the '783 patent provides “an expansive feature set” that is “integrated into” the “relatively compact space of a wrist-worn device.” *Id.*, 1:39-42, 1:46-56. In some embodiments, the '783 Patent provides a wrist-worn device that “integrate[s] or combine[s] multiple subsystems”—including a wireless charging receive coil operating in conjunction with a power conditioning circuit and biometric sensors—“into a single device” to provide a wrist-worn device with a wide range of features,

including wireless charging and biometric sensing capabilities. *Id.*, 1:19-25, 1:46-56, 7:9-24, 5:25-40, 4:24-49.

The '783 Patent discloses a device 100 that can facilitate wireless recharging of its rechargeable battery via a charging dock. *Id.*, 1:18-25, 8:50-59. A perspective view of the device 100 and the charging dock 1802 is shown in Fig. 18 (below left; annotated), with a simplified block diagram of the device and charging dock being shown in FIG. 19 (below right; annotated). *See id.*, 6:28-31.

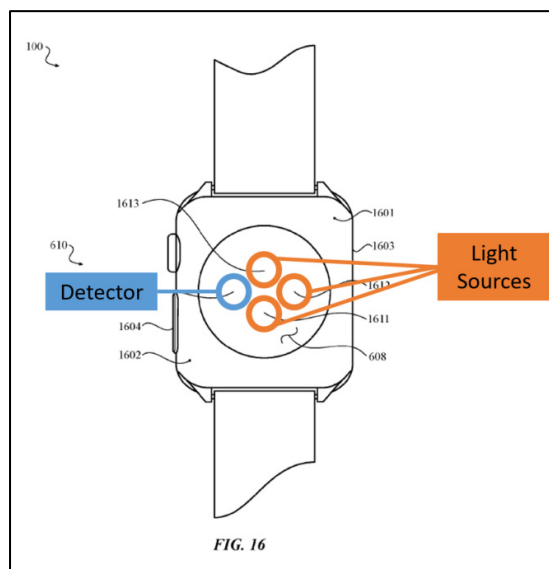


As shown above, an “inductive power transmitter dock 1802 ... is configured to couple to and wirelessly transmit power to an inductive power receiver,” such as the watch device 100. *Id.*, 43:5-11. The charging of the device’s battery 114 is facilitated when “a bottom surface of the housing of the device 100 ... partially contact[s] a top surface of the dock housing.” *Id.*, 45:18-26. In particular, the “internal battery 114 is operably connected to a receive coil 1869 via power conditioning circuit 1810” and the receive coil further includes

“one or more windings for inductively coupling with a transmit coil 1832 of the dock 1802.” *Id.*, 44:36-44. When the bottom surface of the housing of the device 100 (e.g., the rear cover) contacts the top surface of the dock housing, the “receive coil 1869” receives power from a transmit coil 1832 of the dock 1802 (where the power transfer is facilitated via “electromagnetic induction or magnetic resonance”) and “may pass the received power to [the] battery 114 ... via power conditioning circuit 1810.” *Id.*, 44:38-62, 45:18-22.

In addition to wireless charging, the device 100 can also facilitate biometric sensing using a “biosensor module” made up of “one or more sensors” that are “used to calculate a health metric,” such as “a heart rate, a respiration rate, blood oxygenation level, a blood volume estimate, blood pressure, or a combination thereof.” *Id.*, 37:48-55; 8:26-38, 13:24-42. The figure on the right shows an exploded view of an example embodiment of the wearable device, with “a biosensor module 710 ... disposed in an opening formed in the rear surface of the housing 601.” *Id.*, Fig. 7, 28:7-24. In some embodiments, and as depicted in further detail with reference to FIG. 16 (reproduced and annotated below), the “biosensor module 710 may include one or more light sources, one or more photodetectors, and one or more electrodes or conductive elements that are configured to detect and measure a physiological condition or property of the

user.” *Id.*, 28:7-23, Fig. 16 (showing an array of light sources 1611-1613 and a photodetector 1614).



The light sources 1611-1613 and the detector 1614 on the rear portion of the device “are configured to function as an optical sensor or sensors,” such as “a photoplethysmography (PPG) sensor or sensors.” *Id.*, 38:23-38. Additionally, the device can include “one or more electrodes” (e.g., electrodes 1601 and 1602 in FIG. 16 above) that can be used to “measure electrical properties of the user’s body.” *Id.*, 13:34-39, 39:40-46.

In some embodiments, the biosensor module (which integrates some or all of the above-described biosensors) is “separate from and attached to the housing 601 of the device 100.” *Id.*, 40:43-50. For example, and as illustrated with respect to Figs. 7 and 16 (shown above), “the biosensors” can be “disposed relative to or attached to a rear cover 608 that is formed from an optically transparent material

and is configured to be positioned with the opening of the housing 601.” *Id.*, 40:43-50.

In this manner, the ’783 Patent provides a wearable device with at least wireless charging capabilities and biometric sensing, and recites a specific configuration in which the same rear cover/opening of the device facilitates both wireless power transmission to the receive coil on the device 100 and optical signal transmission to/from the biosensor module. *See id.*, 1:19-25, 2:44-55, 13:34-39, 39:40-46, 40:43-50, 44:38-62, 45:18-22.

III. PROSECUTION HISTORY SUMMARY

A. Prosecution History of the ’783 Patent

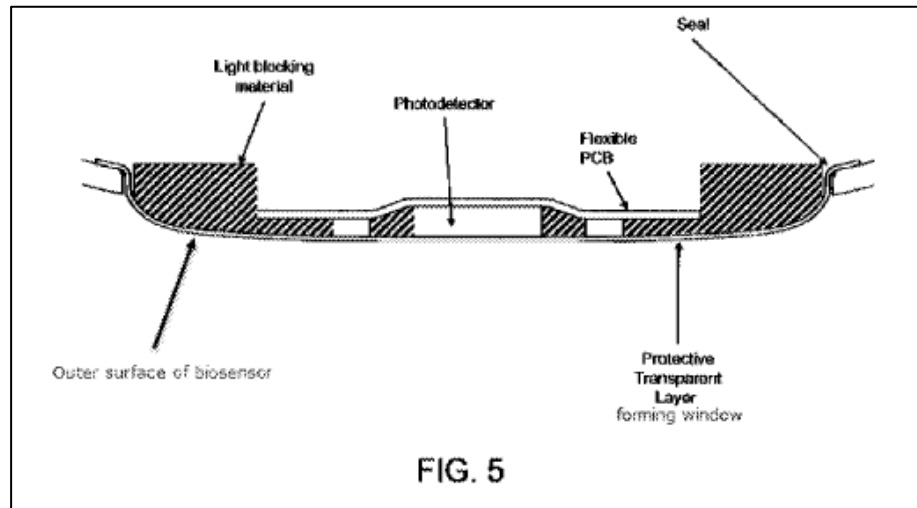
The application for the ’783 Patent was filed on September 10, 2016. Ex. 1001, p. 1. This application (App. No. 15/261,917) is a continuation of a non-provisional application (App. No. 14/842,617) filed on September 1, 2015, and further claims priority to a provisional application (App. No. 62/044,974) filed on September 2, 2014. Ex. 1002, 1965; Ex. 1001, pp. 1-2.

During prosecution, the Examiner issued an office action, rejecting the then-pending claims on multiple prior art-based grounds. Ex. 1002, 1475-1504. Specifically, the Examiner rejected the pending claims in view of multiple references, including (among others), Yuen (US Patent Pub. No. 2014/0107493; Ex. 2001), Mistry (US Publication No. 2014/0139486; Ex. 2005), Mensinger (U.S.

Patent No. 8,229,535; Ex. 2006), and Burton (US Patent No. 7,682,070; Ex. 2007). Ex. 1002, 1478, 1487-1493. In support of these rejections, the Examiner provided the following pertinent findings and rationale:

1. “Yuen et al. describes a wearable electronic device that includes biometric and biosensor monitoring (para 46-48)... Figures 3 and 4 show the *biosensor module protruding from the bottom side* of the device housing. Figure 5 is further relied on to show the rear cover for the biosensor module comprising an edge protruding outwardly from the bottom portion of the housing and *having an outer surface with a convex contour shape*.... [F]igure 5 also shows the wearable device with *an array of LED light sources and a photodetector within the biosensor protrusion and serving as one or more optical components of the biosensor module* (para 45, also see figures 8 and 9).”²

² Emphasis added throughout unless otherwise noted.



Ex. 1002, 1478-1480 (citing Ex. 2001, FIGS. 3-5, ¶¶45-48); *see also id.*, 1488-1489.

2. “Mistry et al. describes a *wearable wristwatch sensor* comprising a touch sensitive display and *an optical sensor*.” Ex. 1002, 1490-1491.
3. “Burton describes a wrist worn device considered analogous to the other cited references. *Burton is relied on to teach that wristwatches include a protective transparent cover ..., wherein the cover may be formed from a polymer, glass, or sapphire crystal (col 3 lines 41-57). ... [B]urton teaches that sapphire is a commonly employed material for watch crystals or covers.*” Ex. 1002, 1493.

Applicant subsequently interviewed the Examiner, with the substance of the interview including a discussion of the cited prior art and Applicant’s proposal to add “structural features to the claim including features that facilitate wireless charging, such as a ... cover configured to allow *transmission of biosensor signals*

and wireless charging signals.” Ex. 1002, 1269. According to the Examiner, “[s]uch amendment” would “overcome the prior art of record.” *Id.*

Consistent with the discussion during the interview, Applicant filed a response that included claim amendments reciting a rear cover or opening configured to pass both optical signals and wireless power signals. *See* Ex. 1002, 1273-1278 (see pending claims 35, 43, and 49, reciting these features); 1279 (memorializing examiner’s agreement that “claims that include structural elements, such as a rear cover, that allow transmission of both biosensor signals and wireless charging signals would overcome the current rejections”). This response resulted in allowance of the claims (*see* Ex. 1002, 887, 707-708, 382-386, 200-201, 14-15), with the Examiner noting in his reasons for allowance that the “prior art fails to teach or suggest the *specific arrangement and configuration of the claimed cover, opening in the housing*, and wireless charging coil.” Ex. 1002, 387. The application subsequently issued as the ’783 Patent on April 21, 2020. Ex. 1001, p. 1; Ex. 1002, 3.

B. Prosecution History of Pending Applications Related to the ’783 Patent

Prosecution is ongoing in four patent applications that are continuations of the ’783 Patent. These include App. Nos. 17/188,995 (“’995 Application”), 17/951,973 (“’973 Application”), 18/075,253 (“’253 Application”), and

18/119,175 (“’175 Application”). Each of these applications is being examined by the same examiner (Examiner Brian T Gedeon) who examined the application for the ’783 Patent. In each of these Applications, Applicant submitted the IPR Petition for the ’783 Patent along with the art cited therein. *See* Ex. 2011, 359-361; Ex. 2012, 311-313; Ex. 2013, 338-340; Ex. 2014, 280-282. In subsequently-entered office actions, the Examiner formed rejections in view of some of the references cited in the Petition, including the Kotanagi and/or Honda references that are applied with respect to the independent claims of the ’783 Patent in the Petition. *See* Ex. 2011, 387-405; Ex. 2012, 623-634; Ex. 2013, 361-383; Ex. 2014, 1-14. Applicant intends to respond to each of the entered actions, but has not done so as of the filing date of this response.

With respect to the ’995 Application, the Examiner entered an office action on May 8, 2023, in which the Examiner rejected pending independent claims 21 and 35 based on the combination of Honda in view of Kotanagi and U.S. Patent No. 5,738,104 to Lo et al. (“Lo”). Ex. 2011, 391-397, 336-343. The Examiner separately rejected pending independent claim 28 based on the combination of Honda in view of Kotanagi, Lo, U.S. Pub. No. 2015/0026647 to Park (“Park”), and U.S. Patent No. 4,375,219 to Schmid (“Schmid”). *Id.*, 398-401, 336-343. Notably, the pending claims are different from the claims of the ’783 Patent in that the pending claims do not recite a wireless charging coil in the device or any

transmission of wireless power signals to a wireless charging coil through a rear cover of the claimed device³, as recited in independent claims of the '783 Patent.

See id.

With respect to the '175 Application, the Examiner entered an office action on May 24, 2023, in which the Examiner rejected pending claims 21-40, and in particular, rejected pending independent claims 21, 30, and 35 based on the combination of Kotanagi in view of Park and Lo. Ex. 2014, 1-16, 285-289. Pending independent claims 21, 30, and 35 recite a light source and a photodetector, where the light source is “configured to emit light through the rear cover” and the photodetector is configured to receive/detect reflected light emitted by the light source. *Id.*, 285, 287; *see id.*, 288. The pending claims do not recite any charging coil or transmission of power signals to a charging coil through a rear cover. *See id.*, 285-289. Although pending claim 28 recites “a power interface positioned at the rear of the housing and configured to receive power from an external charging device” (*id.*, 286), the Examiner alleged that this feature is

³ The only reference to wireless charging in the pending claims appears in claim 34, which recites that the device’s “convex exterior profile facilitates alignment between the rear cover and a mating surface of an external wireless charging device.” *See id.*, 340.

disclosed based on Kotanagi's teaching of an "external connection terminal 21" for wired charging of the rechargeable battery 13. *See id.*, 9 (citing Ex. 1005, ¶¶49, 53). In other words, the Examiner did not rely upon any art-based teachings of a wireless charging receive coil or wireless charging of such a coil through a rear cover. *See id.*

With respect to the '973 Application, the Examiner entered an office action on April 24, 2023, in which the Examiner rejected pending claims 21-31 based on the combination of Honda in view of Kotanagi. Ex. 2012, 152-154, 627-633. Pending independent claim 21 recites multiple features of an "electronic device," including a housing, a band, a display, an antenna⁴, a cover, a biosensor module, and a wireless charge receiving coil. *Id.*, 152. Similar to the '783 Patent's independent claims, pending claim 21 recites a "cover disposed over [a] second opening" that "is configured to pass optical signals generated by the biosensor

⁴ The antenna limitation is not included in the '783 Patent's independent claims and specifically recites "an antenna configured to facilitate wireless communication between the electronic device and a mobile phone, wherein the wireless communication comprises transmission of information to the mobile phone for visual display to the user." *Id.*, 152.

module” and “to pass wireless power from an external wireless charging device to the wireless charging receive coil.” *Id.*

With respect to the ’253 Application, the Examiner entered an office action on April 25, 2023, in which the Examiner rejected the pending independent claims (claims 21, 32, 41) based at least on the combination of Honda in view of Kotanagi and Park, or Honda in view of Kotanagi and Lo. Ex. 2013, 150-157, 365-370, 374-379. In particular, independent claims 21 and 32, together with claims 27 and 34, recite a “charging coil ... configured to receive wireless power through the rear cover,” “a light source configured to emit light,” “a detector configured to receive a reflected portion of the emitted light,” and the “rear cover include[ing]: a first window to transmit light from the light” and “a second window to receive the reflected portion of the emitted light.” *Id.*, 150-153.

However, as explained in §§ VII.A and VII.B *infra*, Honda’s and Kotanagi’s teachings—as relied upon in the Petition and in the office actions for the ’973 and ’253 Applications—are cumulative of teachings previously considered by the Examiner during the ’783 Patent’s prosecution with respect to its “cover” limitations, and suffer from the same deficiencies present in the art of record with respect to the ’783 Patent’s claims (i.e., they fail to disclose or suggest a cover that is configured to transmit/receive optical signals and wireless power signals).

Moreover, as noted above, prosecution in these (as well as the other two applications) is ongoing, no final determinations or evaluations of the art have been reached in any of these applications, and Applicant intends to present a response to each of the office actions to highlight the same deficiencies in Honda and Kotanagi (as well as the other cited references) as was present in the art at issue during the prosecution of the application for the '783 Patent. Thus, Patent Owner submits that the pending and non-final prosecution record in these related—but different—applications do not inform or speak to the issues germane to the Board's exercise of discretion under § 325(d), which is applicable in the context of “another proceeding or matter involving *the patent* [that] is before the Office,” and which provides that, in such a context, “a Director [may] reject the petition because the “the same or substantially the same prior art or arguments *previously were presented to the Office*” with respect to that patent. See 35 U.S.C. § 325(d) (emphasis added); *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7, 9 (PTAB Feb. 13, 2020) (precedential) (explaining that (1) under § 325(d), the “art and arguments *must have been previously presented* to the Office *during proceedings pertaining to the challenged patent*” and (2) § 325(d) discretion “reflects a commitment to defer to *previous Office evaluations of the evidence of record*” for the patent at issue).

IV. PERSON OF ORDINARY SKILL IN THE ART

Patent Owner contends that a person of ordinary skill in the art on or about the claimed priority date of the '783 Patent would have had at least a bachelor's degree in electrical engineering, mechanical engineering, biomedical engineering, computer engineering, physics, or a related field, and would have had at least two years of relevant work experience with capture and processing of data or information, including but not limited to physiological information, or equivalents thereof. Less work experience may be compensated by a higher level of education and vice versa.

V. CLAIM CONSTRUCTION

While not agreeing with Petitioner's proposed constructions (or lack thereof) for certain claim terms (*see* Petition, 13-16), *solely* for purposes of this Preliminary Response, Patent Owner does not object to the constructions proposed by Petitioner at this time. Patent Owner reserves the right to assert alternative constructions for relevant claim terms in this or another proceeding involving the '783 Patent (or another patent related thereto), where appropriate.

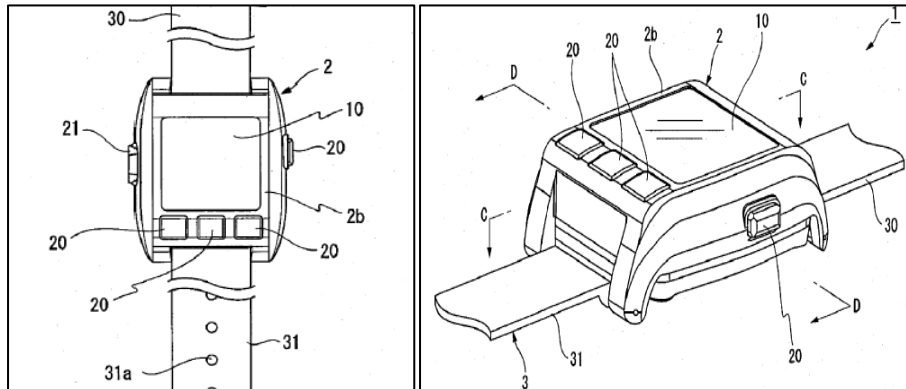
VI. THE ASSERTED PRIOR ART

A. Kotanagi (Ex. 1005)

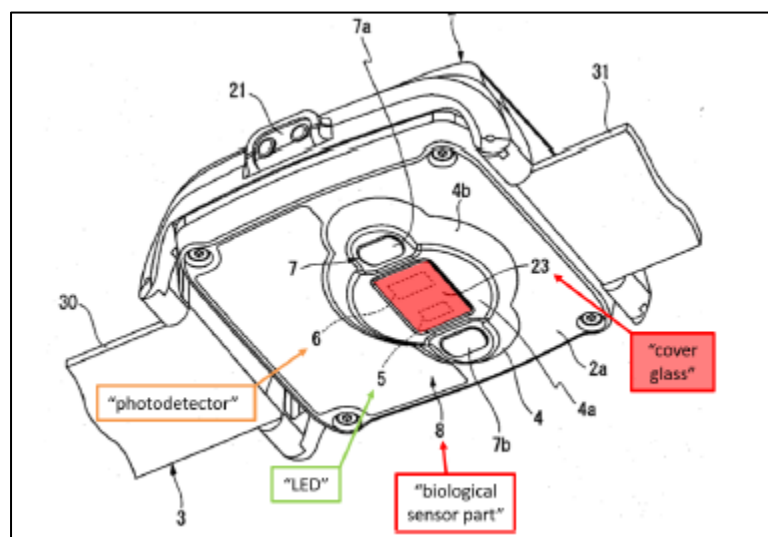
Kotanagi discloses a "biological information measuring device 1," which as shown in FIGS. 1 and 2 below, includes a "wristwatch-type device" that "detects

pulse rate as a type of biological information while mounted to [a] wrist (arm)”

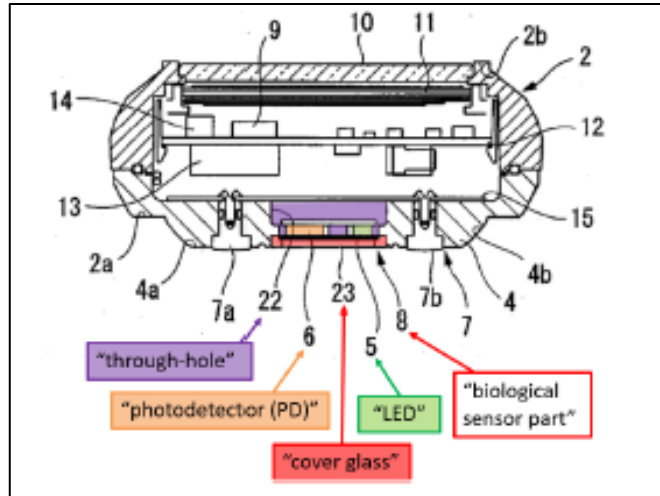
Ex. 1005, ¶44.



The rear surface of Kotanagi’s wristwatch device, which is reproduced below (in a figure annotated and provided by Petitioner), includes “a protruding part 4[,], which protrudes from the lower surface 2a[,], is formed on the lower surface 2a of the housing 2.” *Id.*, ¶45.

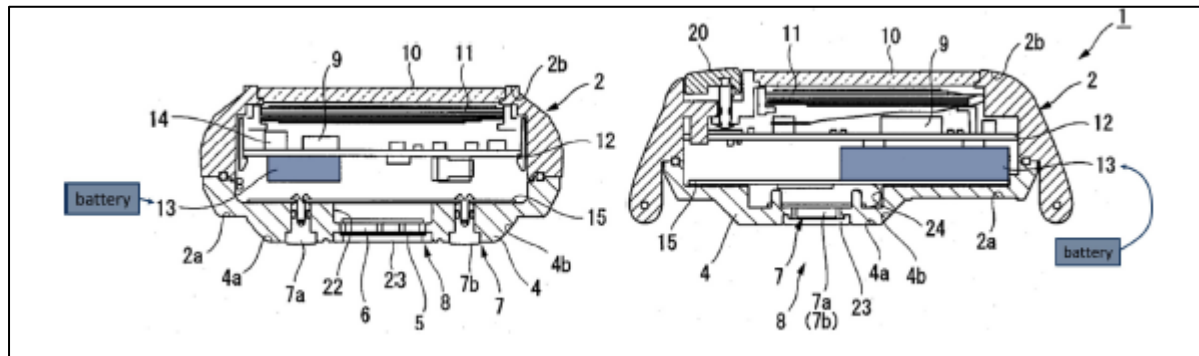


A biological sensor part 8, which includes a LED 5 and a photodetector (PD) 6, is disposed on the lower surface 4a of the protruding part 4. Ex. 1005, ¶46. As shown below, the biological sensor part 8 is “formed in the center of the lower surface 4a of the protruding part 4,” with the “LED 5 and the PD 6” being positioned in “the protruding part 4.” *Id.*, ¶¶55-56. A cover glass 23 covers the through-hole 22 and the biological sensor part 8. Ex. 1005, ¶55, Fig. 7 (reproduced on right; annotated by Petitioner).



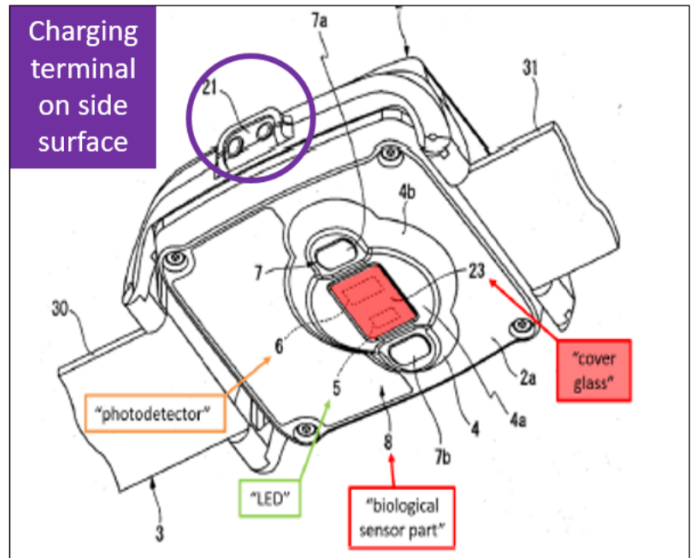
When the wristwatch is mounted on a user’s wrist, Kotanagi explains that the LED 5 “emit[s] light toward the ... body” and the PD 6 receives reflected light from the “body out of the light emitted by the LED 5,” and generates “a pulse signal ... corresponding to the amount of received light.” *Id.*, ¶46.

Kotanagi’s wristwatch device 1 includes a battery 13 that is used to power up the device and its different subcomponents:



Ex. 1005, Figs. 6-7 (annotated by Petitioner), ¶53. Kotanagi discloses that the battery 13 is rechargeable, and further discloses an external connection terminal 21 “for recharging the rechargeable battery 13 by supplying power from an external device such as a recharger.” *Id.*, ¶53; *see id.*, ¶72 (“the rechargeable battery 13 can be charged with power by connecting a recharging cord or the like connected to a recharger to the external connection terminal 21”). “In addition, rather than the external connection terminal 21,” Kotanagi contemplates that “a transformer or the like for supplying power to a recharger and to the inside of the housing 2 may be provided so as to recharge the rechargeable battery in a contactless state.” *Id.*, ¶53,

However, Kotanagi does not disclose how the rechargeable battery would be charged in the “contactless state” nor does it disclose the surface via which such charging would be performed. *See id.* The only positional reference for charging that Kotanagi provides is via the “side surface of the housing.” *Id.*,



¶53 (“an external connection terminal (recharging means) 21 for recharging the rechargeable battery 13 ... is provided on *the side surface of the housing 2*”), Fig. 5 (reproduced above; annotated by Patent Owner and Petitioner; showing connection terminal 21 for charging on the side surface of the device’s housing).

B. Honda (Ex. 1006)

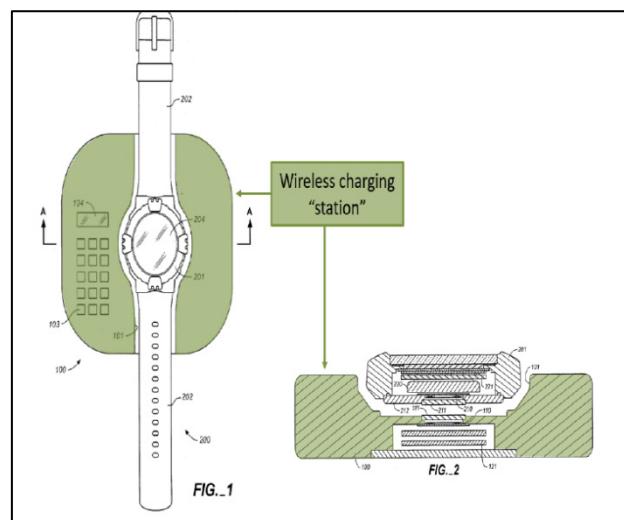
Honda provides an electronic apparatus (e.g., an electronic watch) that enables “efficiency of a power transmission from a charging unit to” the apparatus in a “non-contact” fashion. Ex. 1006, 1:5-16, 2:55-60.

In particular, Honda seeks to overcome deficiencies in prior non-contact contactless charging implementations. First, Honda recognizes that, when the gap between charging coils in the receiver device (e.g., the electronic watch) and the transmitting device (e.g., the charger) “is increased,” and “the degree of magnetic

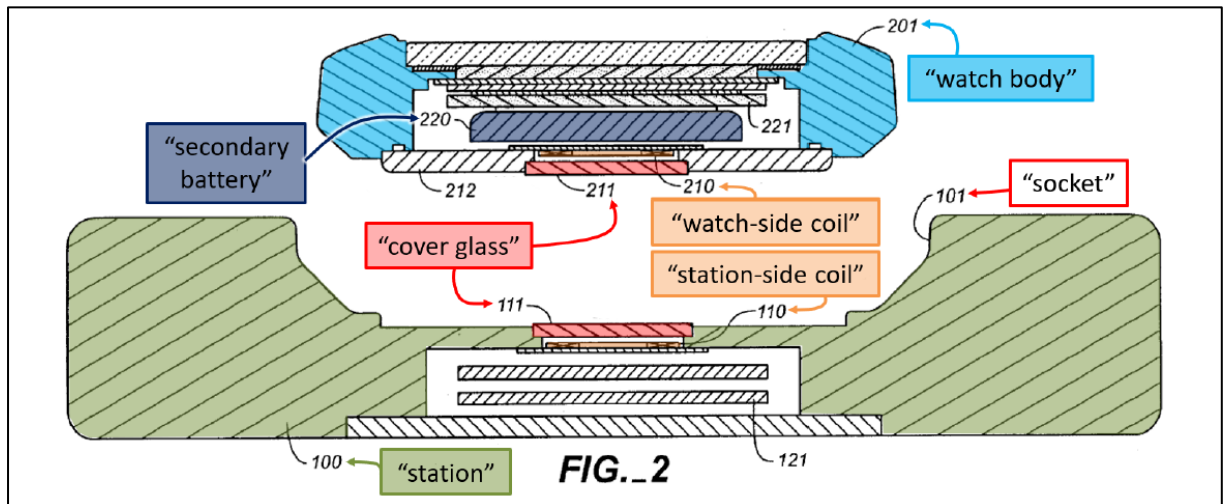
coupling weakens, substantially reducing the charging current to the secondary battery for charging.” *Id.*, 2:39-44. Second, Honda recognizes that metal materials in the housing can create eddy currents, which in turn can “weaken[] the electromagnetic coupling” between the charging coils and limit the quick charging of the device’s battery. *Id.*, 2:44-52, 13:25-32.

Honda seeks to address these problems, with one of its goals being to enable quick charging of the device’s battery. *Id.*, 2:55-60. To that end, Honda discloses “an electronic apparatus” that “includes a first device and a second device, which perform a power transmission ... through the electromagnetic coupling of coils which are arranged in mutually facing positions in the respective devices,” where the relative inner and outer diameters of coils in the first and second devices can vary by certain predetermined amounts without affecting charge efficiency. *See id.*, 2:66-4:26.

As shown in Figs. 1 and 2 (reproduced on right; annotated by Petitioner), an electronic watch 200 is shown seated in a socket 101 of a station 100 to facilitate a charging operation. *Id.*, 6:4-11.



An expanded version of FIG. 2 (as annotated by Petitioner) is reproduced below and provides a sectional view of the watch 200 shown in FIG. 1. *Id.*, 6:21-22, FIG. 2.



As shown, “a watch-side coil 210 for ... battery charging is arranged in a case back 212 of the watch body 201 and is covered with a cover glass 211. The watch body 201 includes a circuit board 221, connected to a secondary battery 220 and a watch-side coil 210.” Ex. 1006, 6:22-27. In the charging station 100, a station-side coil 110 is arranged in the portion of the socket 101 that faces “the watch-side coil 210, and is covered with a cover glass 111.” *Id.*, 6:28-35. “The station 100 includes a circuit board 121, to which the station-side coil 110, the input section 103, the display section 104, and a primary power source (unshown) are connected.” *Id.*

“When the electronic watch 200 is placed onto the station 100, the station-side coil 110 and the watch-side coil 210 are physically out of contact with each other, but magnetically coupled with each other because the surfaces of coil winding of both coils are generally ... parallel to each other.” *Id.*, 6:36-40.

Additionally, to reduce the charging inefficiencies stemming from the use of metal materials in the device’s housing, the ’783 Patent contemplates “the use of an insulating material,” such as glass, for “the external housing results in a transmission efficiency ten times as high as the one achieved by a stainless product.” *Id.*, 13:45-48. In some embodiments, a deposited surface can be employed on the inner surface of the glass member for aesthetic purposes and to avoid damage/deterioration of the device’s components from UV light. *See id.*, 13:53-64, Fig. 15 and associated description.

In addition to its charging capabilities and associated descriptions, Honda additionally discloses that the watch 200 “detects biological information including the pulse rate or the heart rate of the body through an unshown sensor and stores it.” *Id.*, 6:17-20, 8:40-42. Honda, however, does not explain where the “unshown sensor” would be provided or positioned in the device, nor does it disclose or suggest such an “unshown sensor” would facilitate transmission of biometric signals through the rear cover/opening in the described device. *See id.*

VII. THE PETITION SHOULD BE DISCRETIONARILY DENIED UNDER § 325(D)

The PTAB uses the following two-part framework to determine whether to exercise its discretion to deny institution of an *inter partes* review under § 325(d):

- (1) whether the same or substantially the same art previously was presented to the Office *or* whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if *either condition* of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims

Advanced Bionics, Paper 6 at 8.

As explained below, Petitioner has failed to carry its burden under both parts of the *Advanced Bionics* framework because (1) the Petition advances substantially the same prior art references or arguments that were previously presented to and considered by the Examiner during prosecution and (2) Petitioner has not demonstrated that the Office erred in a manner material to the patentability of challenged claims.

A. *Substantially the Same Prior Art And Arguments Were Previously Presented to the Patent Office During the '783 Patent's Prosecution*

Petitioner argued that the petition should not be discretionarily denied under Section 325(d) because the Petition “presents *new prior art* and new patentability

arguments that have never previously been before the Office.” Petition, 109-110.

Petitioner’s arguments fail the first part of the *Advanced Bionics* framework, under which the critical inquiry is not whether “new prior art” or new arguments are being presented in the petition. Rather, the first part of the *Advanced Bionics* framework is satisfied when the Petition raises the “*same or substantially the same*” art or arguments as previously presented to the Office with respect to the patent at issue, as is the case here. Specifically, and as explained below, the first part of the *Advanced Bionics* framework is satisfied here because the Petition advances references and arguments that are cumulative of what was previously presented to and considered by the Office during prosecution of the ’783 Patent.

1. Overview of the Petition’s Relied-Upon Teachings in the Grounds Presented with Respect to Independent Claims 9 and 15

Beginning with independent claims 9 and 15, the Petition advances a combination of Kotanagi (Ex. 1005) and Honda (Ex. 1006). *See* Petition, 21-32, 41-50. Kotanagi allegedly teaches a wrist-mounted device that includes optical elements (e.g., LEDs and photodetector) positioned behind a cover/opening at the bottom of the device’s housing. *See* Petition, 21-22. Per Petitioner, Kotanagi also contemplates wireless charging based on its disclosure of “a transformer or the like for supplying power to a recharger and to the inside of the housing 2 ... to recharge the rechargeable battery 13 in a contactless state.” Petition, 22-23 (citing Ex. 1005,

¶53). Even assuming *arguendo* that this disclosure in Kotanagi suggests wireless charging, Kotanagi does not disclose or suggest where any wireless charging components (e.g., charge receiving coil, transformer, etc.) are positioned, nor does Kotanagi describe wireless charging using the *same cover/opening* via which optical signals are allegedly transmitted and received by/from the optical elements—as is required by the independent claims. *See* Ex. 1005, ¶53; *see also*, e.g., Ex. 1001, claim 9 (“*cover is configured to pass optical signals to and from the biosensor module*” and “to pass *wireless power to the wireless charging receive coil*”), claim 15 (“a biosensor module ... configured to transmit optical signals and receive reflected *optical signals through the opening [in the bottom portion] of the housing; and* a wireless charging receive coil ... configured to receive *wireless power through the opening of the housing*”).

Petitioner further alleges that Honda teaches a wrist-mounted device that enables wireless charging by positioning a wireless charging coil behind the cover/opening at the bottom of the device. *See* Petition, 23-25. Honda additionally discloses that the “electronic watch 200 detects biological information including the pulse rate or the heart rate of the body through an unshown sensor and stores it.” Ex. 1006, 6:18-20, 8:40-42; Petition, 31. However, Honda does not disclose whether the “unshown sensor” is an optical sensor. Honda also does not disclose any optical signal transmission using such an “unshown sensor,” much

less describe that such optical transmission happens using *the same cover/opening* via which wireless power signals are transmitted—as is required by the independent claims.

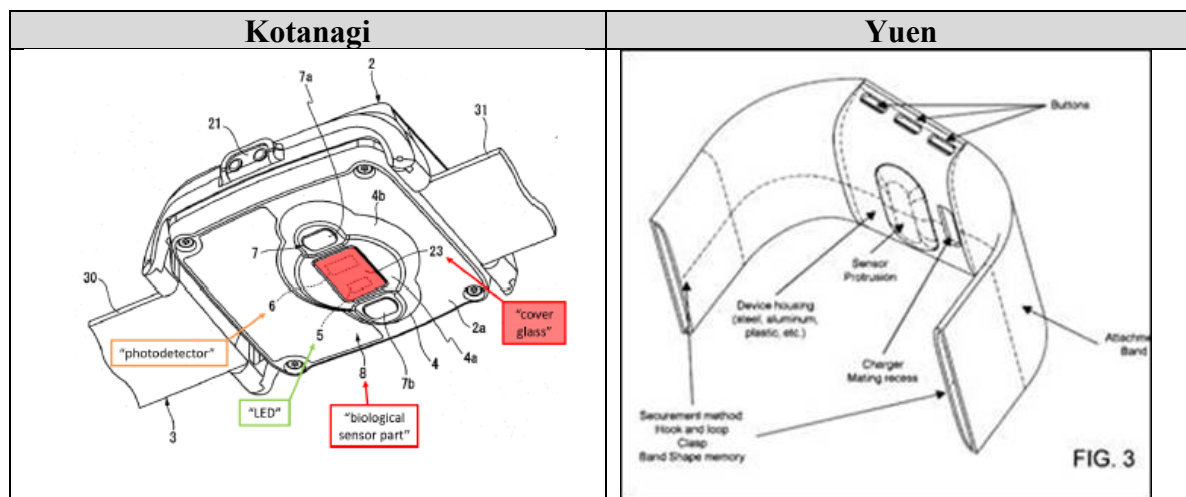
2. *Kotanagi and Honda are Substantially the Same As The References Considered During the '783 Patent's Prosecution with Respect to Independent Claims 9 and 15*

During prosecution of the '783 Patent, the Examiner cited and considered multiple prior art references with teachings that are the same as or substantially the same as the above-described art and arguments presented in the Petition.

For example, during prosecution, the Examiner cited and applied the Yuen reference in an office action. Ex. 1002, 1478 (citing Ex. 2001, Yuen). Yuen is substantially the same as Kotanagi in that Yuen—like Kotanagi—contemplates a watch with optical elements positioned behind a rear cover of the watch's housing and further discloses that these optical elements facilitate detection and measurement of pulse rate. *See* Ex. 2001, FIGS. 3-5; Ex. 1002, 1478-1479

(finding that (1) *Yuen's "FIGS. 3 and 4 show the biosensor module protruding from the bottom side of the device housing,"* (2) Yuen's FIG. 5 further "show[s] the *rear cover for the biosensor module* comprising an edge protruding outwardly from the bottom portion of the housing and having an outer surface with a convex contour shape," and (3) Yuen's FIG. 5 "also shows the wearable device with *an array of LED light sources and a photodetector within the biosensor protrusion*

and *serving as one or more optical components of the biosensor module*”). The following table provides a side-by-side comparison of the rear sides of Kotanagi’s watch and Yuen’s watch, with both providing optical sensors in a protruded portion within the rear cover (notably, the figure of Yuen’s watch was expressly cited and reproduced in the Examiner’s entered office action). *See id.*



Similarly, Shim—a reference that was cited in an information disclosure statement (IDS) and considered by the examiner—describes an optical sensor (e.g., heartbeat sensor) configured to transmit/receive optical signals via a back cover of a wrist-worn device. *See* Ex. 2002, ¶¶126-129, 148, 155, FIGS. 2A-2B, 3, 6A-6C; Ex. 2018, pp. 203-348, FIGS. 2(a)-2(b), 3, 6a-6c, ¶¶90, 93; 6; *see also* Ex. 2003, ¶¶285-289, 322, FIG. 7-13 (showing and describing yet another record reference teaching a biosensor provided in rear surface of wrist-worn device—much like the teachings of Yuen and Shim); Ex. 2010, 534, 536, 538 (similarly showing sensor

on rear surface of device); *see also Peloton Interactive, Inc. v. iFIT, Inc.*, IPR2022-00029, Paper 13 (PTAB Apr. 22, 2022) (references cited on an IDS that are expressly considered by the examiner constitute as previously presented art under the *Advanced Bionics* framework). Additionally, like Petitioner's allegations in view of Kotanagi, Shim also contemplates wireless charging in addition to its biosensing capabilities. *See, e.g.*, Ex. 2002, ¶112 ("As another example, the power supply unit 190 ***may be configured to charge a battery through a wireless method without using the connection port.*** In this case, the power supply unit 190 may receive power from ***an external wireless power transmission device through at least one of an inductive coupling method*** based on a magnetic induction phenomenon, and a magnetic resonance coupling method based on an electromagnetic resonance phenomenon."); Ex. 2018, pp. 203-348, ¶¶74-75 (similar disclosure). And, much like Kotanagi, Shim also does not describe any wireless power signal transmission via the back cover of the device via which the optical signals are transmitted/received. *See id.*

Similarly, the Examiner cited and considered multiple references that are substantially similar to Honda's teachings of wrist-mounted devices that facilitate wireless charging via the rear cover. One such reference cited and considered during prosecution is Mooring, which describes wrist-worn devices being wirelessly charged via coils positioned and attached to the back cover of the

device. *See* Ex. 2004, 1:38-53 (“[A] currently available type of electronic watch referred to as a “smart watch” is capable of wireless connectivity ***The type of components found inside the case of a smart watch may include a ... a rechargeable battery, and an inductive charging coil.*** The watch may be recharged by placing the watch in a watch stand, and plugging the watch stand into the wall. ***When a coil attached to the contact surface on the back of the watch comes in contact with a charging plate on the watch stand, the smart watch battery is charged through induction.***”).

Although Mooring was cited by the Applicant in an IDS, it was not the only such reference contemplating wireless charging. Indeed, multiple other references of record similarly contemplated wireless charging. *See, e.g.*, Ex. 2005, ¶127 (Examiner-cited reference, describing wireless charging receive coil in body of a wearable electronic device); Ex. 2006, 26:2-27 (Examiner cited reference teaching that “the battery 234 (or batteries) is configured ***to be charged via an inductive and/or wireless charging pad***” and that batteries can be charged using “***wireless methods***”). Notably, each of Mistry (Ex. 2005) and Mensinger (Ex. 2006) was one of seven references independently identified by the examiner and which was expressly relied upon in rejecting certain pending claims during prosecution. *See* Ex. 1002, 1487-1491.

What's more, both the Applicant and the Examiner cited prior art references during prosecution of the '783 Patent that disclosed watches or other wrist-mounted devices with both wireless charging and biometric sensing capabilities. For example, in addition to contemplating wireless charging, Mooring contemplates "biological sensors (e.g., pulse, body temperature, blood pressure, body fat, etc.)" being included in the watch device. Ex. 2004, 10:16-30. Same is also true for the Applicant-cited Shim reference, which also contemplates both wireless charging and biometric sensing. Ex. 2002, Abstract, ¶¶13, 71-72, 112; *see* Ex. 2018, pp. 203-348, ¶¶34, 74-75, 90, 93. Further still, during prosecution, the examiner independently identified and applied the Mistry reference, which discloses a wrist-worn device that can facilitate wireless charging and biometric sensing. Ex. 2005, ¶¶124, 125, 127-128; *see* Ex. 1002, 1491-1492. Again, it bears repeating that Mistry was one of the seven references identified and cited by the examiner during prosecution. *See* Ex. 1001, pp. 1-6.

In summary, much like the alleged teachings of Kotanagi and Honda, the record indicates that the Examiner identified and considered multiple references teaching (1) wrist-worn devices with rear covers/openings that are configured to receive either optical signals or wireless power signals, and (2) wrist-worn devices with dual capabilities of wireless signal transmission and optical signal transmission. Thus, with respect to independent claims 9 and 15, the totality of the

record demonstrates that the Petitioner's identified references of Kotanagi and Honda are substantially the same as the art expressly cited and considered by the examiner during prosecution of the '783 Patent.

3. *Teachings in Kotanagi and Kateraas are Substantially the Same As the References Considered During the '783 Patent's Prosecution with Respect to Independent Claim 1*

With respect to independent claim 1, the Petition continues to rely upon Kotanagi and Honda, and optionally also relies upon the Kateraas reference. Petition, 57-69. Relative to independent claims 9 and 15, independent claim 1 additionally recites that the rear cover is a "ceramic cover." Petitioner contends that Kotanagi's teaching of "cover glass" maps to the claimed "ceramic cover" because, per Petitioner, "glass is considered a subset of ceramics." Petition, 60. Petitioner additionally and optionally relies upon Kateraas's teachings of certain types of allegedly "ceramic" materials, such as sapphire, to argue that Kotanagi's glass would be substitutable for such an allegedly ceramic material. Petition, 60-63, 68-69; *see id.*, 13 (in construing "ceramic cover," contending that "prior art having a rear cover of *glass or sapphire* or any other ceramic material satisfies this limitation").

Thus, under Petitioner's own interpretation and application of such an interpretation to Kotanagi, a ceramic cover can include a cover made of glass. *See id.* However, glass covers were identified and considered by the Examiner during

prosecution, particularly in view of the Yuen reference that was applied by the Examiner during prosecution. Ex. 1002, 1478-1480 (citing Yuen (Ex. 2001)); Ex. 2001, ¶60.

Similarly, the record also reflects cited and considered art that teaches covers made of an allegedly ceramic material such as sapphire—similar to Petitioner’s allegation in view of Kateraas. For example, in an office action issued during prosecution, the examiner relied upon Burton to reject a claim reciting a cover made of sapphire (a ceramic material as Petitioner alleges). *See* Ex. 1002, 1493 (“In regard to claim 20, ... Burton describes a wrist worn device considered analogous to the other cited references. ***Burton is relied on to teach that wristwatches include a protective transparent cover . . . , wherein the cover may be formed from a polymer, glass, or sapphire crystal*** ... Modification of the cover in the invention described by Utter, Gayle et al., Mistry et al., and Burton et al. to be made of sapphire is considered obvious to one of ordinary skill in the art ***since Burton teaches that sapphire is a commonly employed material for watch crystals or covers.***”); *see* Ex. 2007, 3:41-57, 1:27-41.

Thus, although Kotanagi, Honda, and Kateraas were not considered during examination of the application for the ’783 Patent, Petitioner’s relied-upon disclosures in these references are substantially the same as the teachings of the various references of record, including Yuen, Mooring, Mistry, Burton (among

other references), which were cited and considered by the examiner during prosecution. For at least these reasons, the first prong of the *Advanced Bionic* framework is satisfied.

B. Petitioner Has Not Met its Burden to Demonstrate Any Error Material to Patentability, Nor Does the Record Support a Finding of Such Error

Because the first prong of the *Advanced Bionic* framework is satisfied, Petitioner bears the burden to demonstrate the second prong of the framework, namely “that the Office erred in a manner material to the patentability of challenged claims” of the ’783 Patent. As explained below, Petitioner has failed to carry its burden of showing an error material to patentability, nor can it make such a showing in light of the totality of the prosecution record.

1. Petitioner Has Failed to Meets its Burden of Demonstrating Material Error During Prosecution

As a threshold matter, the Petition fails to advance any argument regarding material error during prosecution. *See* Petition, 109-110. At most, Petitioner argues that the references presented in the Petition are “materially better than the references considered during examination because ... they disclose *every limitation of the independent claims, including wireless charging, a ceramic cover, convex shapes, and other features*” and that “the Examiner found the references considered during examination did not disclose all limitations of the

independent claims.” *Id.* Patent Owner respectfully disagrees with these assertions for the reasons explained below.

First, as discussed in § VII.A *supra* and as summarized below, the prior art cited and considered by the examiner during prosecution disclosed the very features that the Petitioner specifically identifies as not being disclosed by the art of record.

- For the allegedly missing “wireless charging” feature, the record includes at least the following references that were considered by the examiner: Ex. 2004, 1:38-55, Ex. 2005, ¶¶124, 125, 127-128; Ex. 2002, ¶112; Ex. 2018, pp. 203-348, ¶¶74-75; Ex. 2006, 26:2-27.
- For the allegedly missing “ceramic cover” feature, the record includes at least the following references that were considered by the examiner: Ex. 2001, ¶60; Ex. 2007, 3:41-57; *see* Ex. 1002, 1478-1480, 1493.
- For the allegedly missing “convex shapes” feature, the record includes at least the following references that were considered by the examiner: Ex. 2001, Fig. 5; EX-1002, 1479, 1489. Notably, however, “convex” shape-related features are only recited in the dependent claims—and not in the independent claims, as Petitioner incorrectly suggests. *See* Ex. 1001, claims 8, 12, 17-18.

Thus, contrary to Petitioner’s assertions, the prior art advanced in the petition provides nothing “new” or “materially better” than the prior art already considered by the examiner.

Second, Petitioner has made no showing to demonstrate or suggest that the examiner misapprehended or overlooked the teachings in the references of record.

- With respect to the “wireless charging” claim feature, the above discussion demonstrates that numerous references—identified by both the Applicant and the Examiner—provided teachings of wireless charging. *See, e.g.*, Ex. 2004, 1:38-55; Ex. 2005, ¶¶124, 125, 127-128; Ex. 2002, ¶112; Ex. 2018, pp. 203-348, ¶¶74-75; Ex. 2006, 26:2-27.
- The same is also true for the “ceramic cover” claim feature, for the reasons described above. Specifically, consistent with Petitioner’s allegation that ceramic includes glass or sapphire (Petition, 13, 60-65), the Examiner expressly considered Yuen’s rear cover **glass** teachings as well as the teachings of Burton for a cover made of sapphire (which Petitioner alleges is a ceramic) during prosecution. *See* EX-1002, 1493, 1478-1480; Ex. 2001, ¶60; Ex. 2007, 3:41-57.
- Similarly, with respect to the “convex” shapes feature, the Examiner expressly noted that this is taught by Yuen’s rear cover shown in its

FIG. 5, which has a “rear cover for the biosensor module” having “an outer surface with *a convex contour shape.*” EX-1002, 1479, 1489 (citing Yuen, FIG. 5).

On this record, Petitioner has failed to demonstrate, much less suggest, how any of the identified features were absent from the art of record, including in various Applicant-cited references as well as Examiner-identified references that were expressly addressed during prosecution of the '783 Patent. Thus, Petitioner has failed to meet its burden of showing any material error during prosecution of the '783 Patent.

2. *The Totality of the Record Does Not Support a Finding of Material Error During Prosecution*

Not only has Petitioner failed to carry its burden to demonstrate material error during prosecution, a thorough evaluation of the prosecution record of the '783 Patent—which Petitioner does not even grapple with in its 325(d) analysis (*see* Petition, 109-110)—supports the inference that there was in fact no material error during prosecution of the application for the '783 Patent.

As a starting point, the deficiency of the prior art considered by the Examiner during prosecution is not the failure of the prior art to disclose “wireless charging, a ceramic cover, convex shapes, and other features,” as asserted by Petitioner. *See* Petition, 109. Rather, and as explained below, the Examiner found

the prior art lacking in describing or suggesting the particular structural arrangement of a cover/opening configured to allow transmission of **both** biosensor signals and wireless charging signals. *See* Ex. 1002, 1269, 387. And, as also explained below, the petition’s identified references for the independent claims are similarly deficient, i.e., none of the references for the independent claims disclose, suggest, or render obvious the features that actually led to the allowance of the claims, namely, a cover/opening configured to allow transmission of **both** biosensor signals and wireless charging signals.

In more detail, during prosecution, the Applicant interviewed the Examiner and in a subsequently-entered interview summary, the Examiner noted that a “cover configured to allow transmission of biosensor signals and wireless charging signals” would “overcome the prior art of record.” Ex. 1002, 1269. Indeed, the response submitted by Applicant after the interview included claims that expressly recited these features, and this amendment in turn immediately led to an allowance in the next Action. Ex. 1002, 1273-1281 (response to office action), 883-887 (notice of allowance). The examiner’s reasons for allowance expressly noted that the “prior art fails to ***teach the specific arrangement and configuration of the claimed cover, opening in the housing, and wireless charging coil.***” Ex. 1002, 387. The allowed claims are the same as the ones now at issue in the Petition.

Despite acknowledging the events that actually led to allowance of the application for the '783 patent (*see* Petition, 11-12), Petitioner made no showing in its §325(d) analysis to address or even refute any error in the Examiner's assessment or rationale for allowability. *See* Petition, 109-110. In other words, Petitioner simply did not grapple with the foreseeable issue of what led to allowance nor did Petitioner articulate any rationale or identify any evidence suggesting that the examiner erred in reaching this conclusion in view of the art of record.

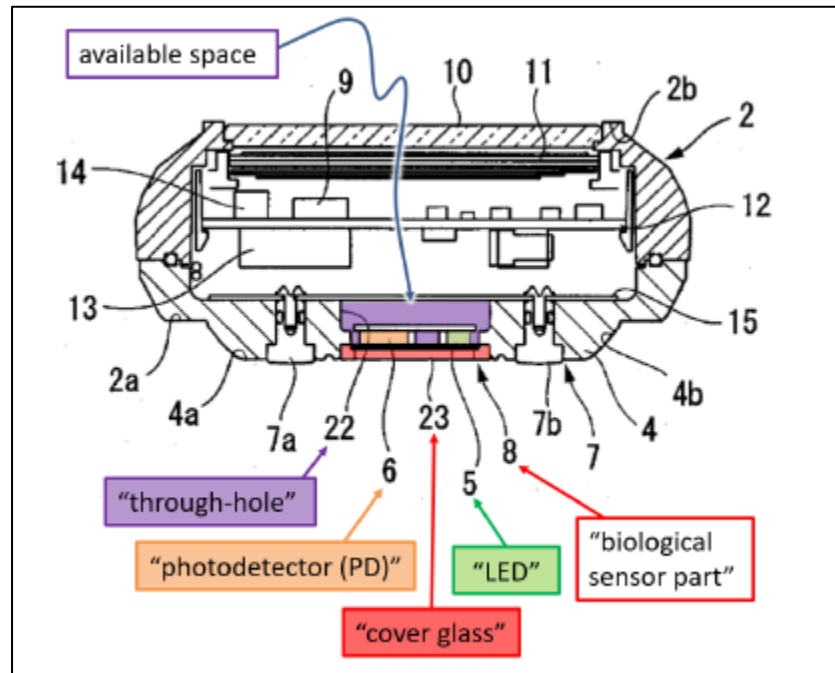
Indeed, as described above, the references cited in the Petition provide nothing new relative to the prior art already considered by the examiner. That is, they are cumulative of the already-considered prior art, having the same deficiency that the Examiner was focused on in allowing the claims of the '783 patent. Specifically, like the already-considered prior art during prosecution, neither Kotanagi nor Honda (or any other reference identified in the Petition) disclose or suggest a wrist-mounted device with a rear cover/opening that enables ***both*** wireless charging and biometric sensing. At best, each of these references teaches ***either*** wireless charging ***or*** biometric sensing via the rear cover/opening of the corresponding wrist-mounted device—much like the above-described references (*see* §VII.A *supra*) that were cited and considered during prosecution.

Along these lines, even if the ongoing prosecution in each of the pending applications related to the '783 Patent are considered for purposes of §325(d)—despite each such proceeding/matter involving a different application and not constituting “another proceeding or matter involving *the patent*”—the Examiner’s reliance on Honda and/or Kotanagi in forming the pending rejections in these applications is not persuasive or germane to the question of material error in the patentability of the '783 Patent. *See* §III.B *supra*. This is especially the case when considering that the prosecution of these applications is ongoing, no final determinations or evaluations of the art as they relate to “patentability” have been reached, and Applicant intends to present responses to the pending office actions to highlight the same deficiencies in Honda and Kotanagi (as well as the other cited references) as was present in the art at issue during the prosecution of the application for the '783 Patent (as explained above). *See* §III.B *supra*. And, again, Petitioner bears the burden of demonstrating material error during prosecution, which Petitioner has failed to do here for reasons explained above. *See* §VII.B.1 *supra*.

Further still, despite the deficiencies in Kotanagi and Honda mirroring those of the art of record, Petitioner nevertheless purports that a POSITA would have been motivated to combine the teachings of Kotanagi and Honda to render obvious a wrist worn device with a cover/opening that allows transmission of both

biosensor signals and wireless charging signals. Petition, 31-32. In support of this assertion, Petitioner presents the following factors as allegedly supporting a motivation to combine Kotanagi and Honda:

- **Factor (1)** - “Kotanagi teaches a pulse rate biosensor watch that may be charged in a ‘contactless state,’ motivating a POSITA to look to Honda. EX1005 ¶(0053). Honda teaches wireless watch charging, but also refers to watch sensors for pulse/heart rate or heart rate of the body, motivating a POSITA to look to Kotanagi.” Petition, 31, 25.
- **Factor (2)** - “[Kotanagi and Honda] are assigned to subsidiaries of the same Seiko parent company.” Petition, 31, 25.
- **Factor (3)** - “Given Honda’s teaching of a wireless receive coil near a rear opening similar to that taught in Kotanagi (where both Honda’s and Kotanagi’s openings have a cover glass), a POSITA would have noticed the available space near Kotanagi’s opening and been motivated to use that space for such a coil, with a reasonable expectation of success.” Petition, 30-32 (reproducing below the annotated figure provided by Petitioner in the petition).



- **Factor (4)** - “Honda’s Figure 15 and related text teach metal covers are inferior for power transmission due to, e.g., eddy currents. EX1006 at 14; *id.* at 2:48–50. A POSITA would thus have aligned Honda’s coil with Kotanagi’s opening such that power could pass through the cover.” Petition, 32 (some internal citations and quotations omitted).

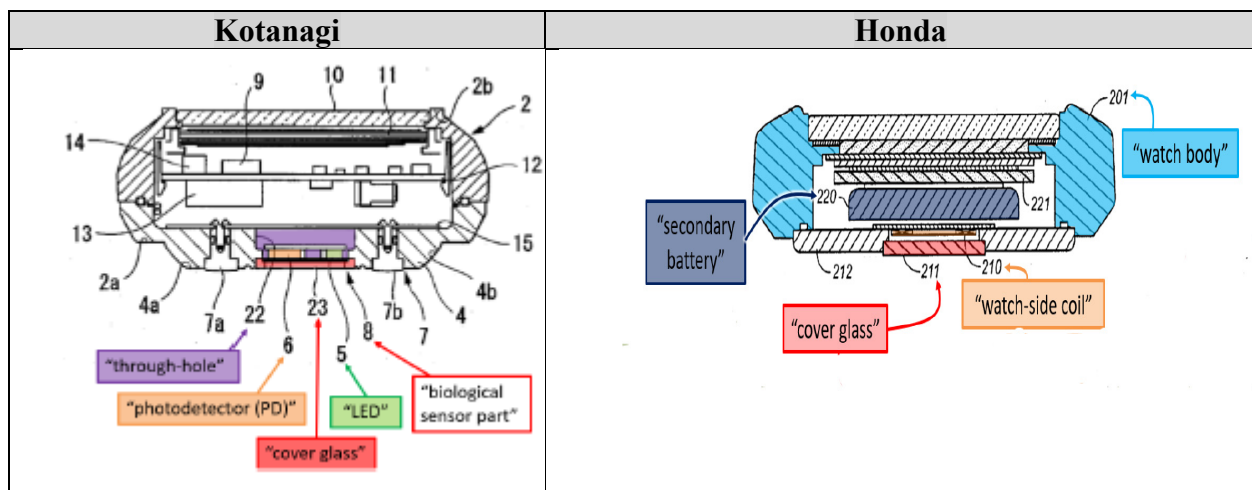
However, as explained below, each of Petitioner’s alleged motivating factors is refuted by the express teachings of the references, and without any rational underpinning, Petitioner’s arguments amount to nothing more than an exercise in impermissible hindsight reconstruction to meet the claim language.

Regarding the alleged first motivating factor, while Petitioner argues that each of Kotanagi and Honda contemplates its respective device’s additional

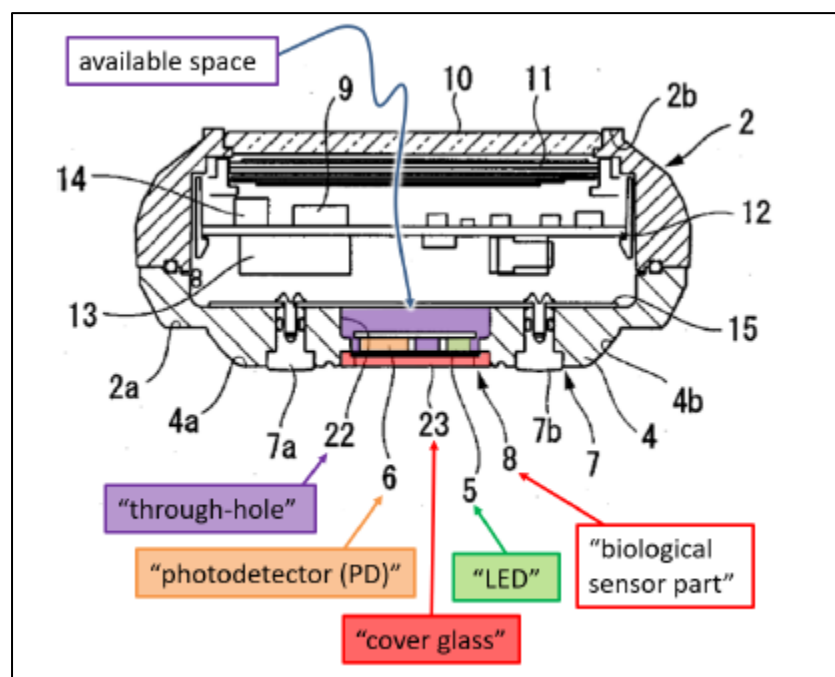
capability to either wirelessly charge or perform biometric sensing (*see* Petition, 31), those teachings do not disclose or suggest such additional capability being facilitated by the respective wrist-worn device's rear cover/opening. At best, those cursory disclosures contemplate wrist-worn devices with both wireless charging and biometric sensing capabilities—which again was well encapsulated by the prior art of record that the examiner expressly considered (as described above; *see* §VII.A *supra*). In other words, neither Kotanagi nor Honda discloses a rear cover that enables transmission of ***both*** wireless charging signals and biometric signals. Nor is there any disclosure or allegation in the Petition's analysis of the independent claims suggesting that each device's cover could or would additionally facilitate transmission of these two very different types of signals.

Regarding the alleged second motivating factor, simply because two references are owned by entities in the same corporate family does not constitute a motivation to combine the references. Petitioner cites no authority suggesting otherwise. Moreover, what Petitioner omits is that Honda pre-dated Kotanagi by over six years and despite the alleged motivation due to ownership by entities in the same corporate family, the later-filed Kotanagi reference only contemplated charging via the side surface (instead of the bottom/rear) of the device housing. *See* Ex. 1005, ¶53.

Regarding the alleged third motivating factor, Petitioner argues that Honda contemplates positioning the charging coil behind the rear cover and this would have motivated putting the charge coil in the rear portion of Kotanagi's device. *See* Petition, 31-32. Simply because Honda puts its charging receive coil in the rear portion of the device does not constitute a reasonable motivation to combine, particularly when considering the structural differences between Honda's and Kotanagi's devices. Specifically, as illustrated below (in figures from Kotanagi and Honda, as annotated by Petitioner), the rear portions of Honda's and Kotanagi's devices are structurally different in that Kotanagi's device includes numerous elements, such as an optical LED, a photodetector, and flexible board in a space provided in the rear of the device, whereas Honda's device only includes a charging coil positioned immediately adjacent to the rear cover.



In other words, Honda's device does not have to contend with or account for the presence of any of the additional components (optical sensors, flexible circuit boards) that are provided in Kotanagi.



have been done when a POSITA would have been confronted with the teachings of Honda and Kotanagi. Indeed, Kotanagi's device includes numerous other "available spaces" where the charging coil *could* be positioned, and under Petitioner's logic, a POSITA could have readily positioned the coil in any of those locations. And yet, Petitioner only hones in on the rear portion of Kotanagi's device to serve its hindsight-driven motivation to present a combination that could read on the claims.

Petitioner, however, has failed to demonstrate that a POSITA would have been motivated to position the charge receiving coil behind Kotanagi's optical elements—particularly when doing so would be counter to the teachings of the references and would impair the charging capabilities of the proposed combination. For example, Honda's teaching of positioning the wireless charging receive coils behind the rear cover does not contemplate or suggest placing the charging receive coil in a location that is separated by Kotanagi's optical elements. Indeed, this would be counter to Honda's stated goal of improving charging efficiency by reducing the space between the charging receive coil and the transmitting coil. *See* Ex. 1006, 2:38-43, 2:55-60 (explaining that, as gap between coils is increased, "the degree of magnetic coupling weakens, substantially reducing the charging current to the secondary battery"). Indeed, in Honda's device, charging efficiency is maintained by positioning the charge receiving coil directly adjacent to the cover

glass. *See* Ex. 1006, Fig. 2 (reproduced above). Thus, adding space and optical elements between the charging coil and the cover glass (as would result in Petitioner's contemplated placement of Honda's charging coil in the identified space of Kotanagi) would be detrimental to wireless charging efficiency and counter to Honda's stated goals that are geared toward increasing/improving charging efficiency. *See* Ex. 1006, 2:38-43, 2:55-60.

Similarly, positioning Honda's wireless charging receive coil behind Kotanagi's optical elements and the board to which they are connected would also be counter to Honda's teachings. Specifically, some of these components (optical elements, such as photodetectors and LEDs, and the flexible board) are typically made of metal-based materials. *See* Ex. 2008, Abstract, ¶¶11, 23-25, 29 (corroborating that light emitting diode (LED) is made from metal-based materials, including among other components, "a metal substrate," "a metal layer," "a mirror layer," and "electrode[s]"); Ex. 2009, ¶¶24, 25, 27, 29 (describing use of metal in LEDs, where the LED includes semiconductor layers, electrodes, metal-based carriers, and a reflective layer made of metal); Ex. 2015, ¶¶14-15, 29-30 (describing a photodetector that, includes among other components, "a metal layer," a photodiode having a semiconductor region, and an electrode); Ex. 2016, ¶¶1-2, 21-22, 79, 82, 84 (describing a photodetector for portable communication tools as including semiconductor elements and electrodes made of, at least in part,

metal); Ex. 2017, 3:37-42, 4:6-17, 4:28-32 (describing components of the LED, including electrodes made at least in part of metal, and a metal-based reflector). Indeed, even Petitioner expressly acknowledges Honda's teaching of metal being "inferior for power transmission due to, e.g., eddy currents." Petition, 32 (citing Ex. 1006 (Honda), 14, 2:48-50). Thus, disposing elements made of such materials between the transmit and receive-side coils, as Petitioner's proposed combination suggests, would reduce charging efficiency and be counter to Honda's teachings of achieving improved wireless charging efficiency. *See* Ex. 1006, 2:38-43, 2:55-60.

For these reasons, Petitioner's third alleged motivating factor is simply a product of impermissible hindsight for at least two reasons: (1) it neglects the substantial structural differences between Kotanagi's and Honda's devices by, for example, focusing only on the particular "space" in Kotanagi's device that allegedly satisfies the claimed features to the exclusion of other "available spaces" in which a charging coil also *could* be placed using Petitioner's same logic; and (2) when accounting for those structural differences, the proposed positioning is counter to Honda's teachings related to improvement of wireless charging efficiency. Such a showing, therefore, cannot support *prima facie* obviousness.

Regarding the alleged fourth motivating factor, Petitioner suggests that metal impairs wireless power signal transmission, which (according to Petitioner) would have motivated positioning of the charging receiving coil behind Kotanagi's

cover glass in the rear portion of the device. *See* Petition, 32. This argument presupposes that Kotanagi’s device housing has to be made of metal, which is not the case. Kotanagi expressly discloses that the device’s housing “is made of a *plastic or a metal* material.” Ex. 1005, ¶48. Thus, to the extent there were any concerns about wireless signal transmission efficiency in view of a metal housing, Kotanagi’s own teachings would have motivated use of a material other than metal—such as an insulating material like plastic—which would not encounter any of the alleged signal transmission inefficiencies stemming from transmission via a metal material. *See* Ex. 1006, 13:45-48 (describing use of an “insulating material for external housing” to achieve increased “transmission efficiency”). Moreover, in view of Kotanagi’s express disclosure of use of plastic in the housing, and considering the issues with charging efficiency by the positioning of charging receive coils behind the optical elements, there would be no reason to position the charging receiving coil in the rear portion of Kotanagi’s device.

Further still, and notably, Kotanagi contemplates wired charging via the side surface (instead of the rear) of its wrist-worn device. Ex. 1005, ¶53 (stating “an external connection terminal (recharging means) 21 for recharging the rechargeable battery 13 by supplying power from an external device such as a recharger is provided on the side surface of the housing 2”), Fig. 5 (showing connection terminal 21 on side surface of device). And, to the extent Kotanagi

further contemplates wireless charging, there would be no reason or benefit to relocate the wireless charging functionality away from the side surface of the device. This is especially the case where, as here, Petitioner has failed to advance any reasonable motivation or benefit for doing so, and when considering the detrimental impact on wireless charging efficiency arising from positioning the charging coil in the rear portion of the device (as described above). Petitioner has therefore failed to meet its burden to demonstrate any reasoned motivation to relocate Kotanagi's charging functionality—even if changed from wired charging to wireless charging—from the side surface of the device to the rear/bottom of the device.

For at least the above reasons, Petitioner has failed to show any error, much less an error that is material to the patentability of the independent claims of the '783 Patent. On the contrary, the totality of the prosecution record demonstrates that the Examiner was in possession of references that contemplated substantially the same functionality as that presented in the Petition, and yet correctly concluded that the claims were allowable because the references of record during prosecution of the '783 Patent—much like the ground references identified with respect to the independent claims in the Petition—did not disclose or suggest a rear cover/opening via which **both** wireless and optical signals could or would be transmitted.

VIII. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests that the Board exercise its discretion to deny the Petition under § 325(d).

Respectfully submitted,

Date: June 28, 2023

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Attorney Docket No: 50095-0144IP1

CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response totals 10,226, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

Date: June 28, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on June 28, 2023, a complete and entire copy of this Patent Owner's Preliminary Response and its supporting exhibits were provided via email, to the Petitioner by serving the email correspondence addresses of record as follows:

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2023-06-21 [008] Patent Owner's Preliminary
Response for D'936 Patent (IPR2023-00728)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL
BOARD

MASIMO CORPORATION
Petitioner,

v.

APPLE INC.,
Patent Owner

Case IPR2023-00728
U.S. Patent D962,936

PATENT OWNER'S PRELIMINARY RESPONSE

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LIST OF EXHIBITS

Exhibit Number	Description
2001	Declaration of Lance Gordon Rake
2002	Replacement Drawings filed in U.S. Design Patent Application 29/816,024 on December 14, 2021
2003	<i>Aries Watches Watch AW80 – Unisex,</i> https://allegro.pl/oferta/smartwatch-zegarek-ekg-pulsoksymetrtermometr-pl-9927412179 .
2004	<i>P11 Plus 0.96 Inch Screen ECG+HRV Smart Health Bracelet, Support Body Temperature, Dynamic Heart,</i> Newegg.com, http://www.newegg.com/p/3EG-000R-000F7 .

I. INTRODUCTION

Masimo’s Petition challenging U.S. Patent No. D962,936 (“the ’936 patent”) is deficient in multiple ways. The problems with Masimo’s Petition begin with its claim construction, which focuses on design concepts that fail to accurately portray the actual claimed design, and which improperly “factors out” multiple ornamental features significant to the design’s cohesive overall appearance. Rather than address the claimed aspects that contribute to its concentric circle overall appearance, and the differences from the prior art, Masimo’s analysis obscures the design without the required analysis relative to the cited references, each of which have fundamental differences that contrast with the overall appearance of the ’936 patent.

For at least the reasons explained below, Masimo fails to demonstrate a reasonable likelihood that the design claim is unpatentable. The Petition should be denied.

II. BACKGROUND

Apple is known as an innovator in consumer products and a leader in industrial design. Apple’s innovative products are produced through its significant investment in research and development in technology and product design. Each product is meticulously created to be appealing and sleek, with numerous iterations to perfect the design of each product and to incorporate aesthetic themes that run through the Apple products.

The Apple Watch is no exception, and has been a best-seller and consumer favorite in part due to its innovative, stylish, and distinctive style. The design claimed in the '936 patent is the result of tremendous design efforts to produce a consumer-wearable product incorporating signature Apple design qualities such as elegant and simple designs that echo themes in other Apple products. As discussed in greater detail below, a Designer of Ordinary Skill (“DOSA”) would have recognized these qualities of the overall claimed design, and appreciated the efforts underlying the design that immediately distinguish its appearance from prior designs.

III. LEVEL OF ORDINARY SKILL

For the purposes of this case, a Designer of Ordinary Skill in the Art (“DOSA”) would have a degree in Industrial Design or Mechanical Engineering, and at least two years of professional experience creating Industrial Designs of consumer products. EX2001, ¶19.

IV. MASIMO CANNOT PREVAIL ON ANY CHALLENGED CLAIM

A. Masimo’s Proposed Claim Construction Ignores Features of the Claimed Design and Relies on General Design Concepts

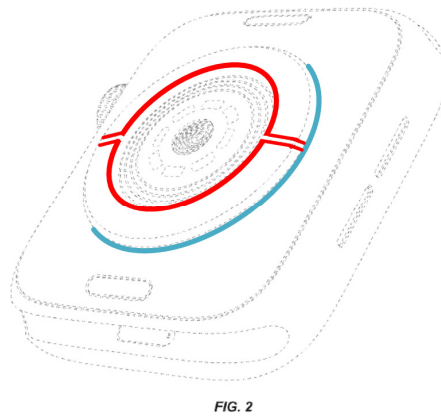
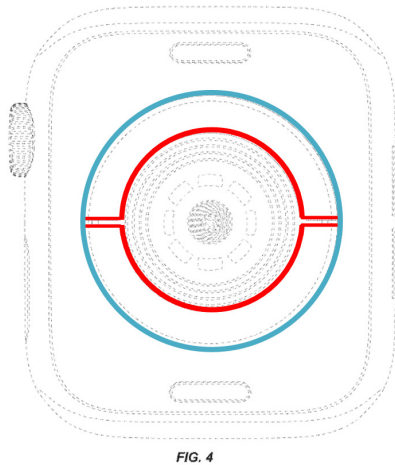
Masimo’s proposed claim construction is deficient because it fails to address prominent features of the claimed design and, critically, the contributions of those features to the overall appearance. *See Skechers U.S.A., Inc. v. Nike, Inc.*, IPR 2017-00617, Paper 13 at 7-8 (PTAB July 6, 2017) (“While we recognize that the

illustration, rather than a verbal description, is the better representation of the claimed design ... Petitioner’s verbal description in these cases does not go far enough.”). While a verbal description may not always be necessary, any verbal description must identify readily observable features of the claimed design that impact its overall appearance. *See Skechers*, IPR2017-00617, Paper 13 at 8; *see also Vitro Packaging, LLC v. SaverGlass, Inc.*, IPR2015-00947, Paper 13 at 5 (PTAB Sept. 29, 2015) (“We are not persuaded that this is an accurate portrayal of the claimed bottle because it focuses on general dimensions, ratios, and elements common to many bottles.”). As described below, this error infects each of Masimo’s grounds, and therefore compels denial of the Petition. *See, id.* at 13 (denying institution, stating, “[w]e do not find Petitioner’s arguments persuasive because Petitioner focuses on design concepts rather than actual appearance and specific design characteristics.” (citation omitted)).

The ’936 patent claims a unique, elegant design for an “electronic device” that has an overall appearance of concentric circles. EX2001, ¶¶20-23; EX1001, Figs. 1-9; EX2002, Figs. 1-9.¹ As illustrated below, the claimed design includes a

¹ EX2002 is the supplemental drawings filed with the USPTO on December 14, 2021.

protruding circular element having a concentric circular arrangement contained within an outermost continuous circle (blue). *Id.* An outer circular shape is formed by thin, elongated arches positioned within the outermost continuous circle (red). *Id.*

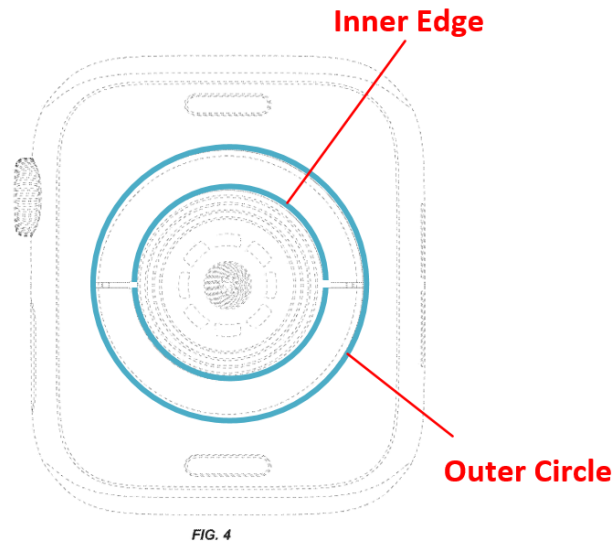


EX2001, ¶20 ((EX1001, Figs. 2 and 4 (annotated))).

Each of these aspects are readily observable features that contribute to the overall appearance of the claimed design. *Id.*

The distance between the inner edge of the arches and the outermost continuous circle is small compared to the diameter of the outermost continuous circle, contributing to the appearance of an elegant, precise and streamlined shape.

EX2001, ¶21. The physical position of the arch shapes, and their elongate proportions compared to the outermost continuous circle, suggests a unified, continuous circle despite the arch shapes not touching each other. *Id.*



EX2001, ¶21 (EX1001, Fig. 4 (annotated)).

Masimo largely ignores these immediately observable features in its claim construction. *See* Pet., 11. For example, Masimo describes the '936 patent's design as "two arc-shaped portions (gray) protruding from the back of an electronic device." *Id.* But this construction ignores many of the prominent features noted above, including 1) the outermost continuous circle, 2) the unified circular appearance provided by the arches, and 3) the distance between the inner edges of the arches and the outermost continuous circle that is small and complementary to the proportions of other features. Each of these features contribute to the unique, concentric circular overall appearance, and are significant to the ordinary designer.

EX2001, ¶24.

Ultimately, Masimo's generic description of design concepts and omission of the appearance provided by the actual claimed shapes and their relationships fails to recognize the overall impression of the claimed design. These omissions taint each of the Petition's grounds, warranting denial of the petition. *Infra*, §§IV.C-E; *see also, Macsports, Inc., v. Idea Nuevo, Inc.*, IPR2018-01006, Paper 6 at 12 (PTAB Nov. 13, 2018) (denying institution); *Vitro Packaging*, IPR2015-00947, Paper 13 at 5 (denying institution); *Skechers*, IPR2017-00617, Paper 13 at 13 (denying institution).

B. Masimo's Proposed Construction Erroneously "Factored Out" Purportedly Functional Aspects of the Design

In an attempt to map the '936 patent's unique design to the prior art, Masimo relies on a construction that improperly "factored out" meaningful aspects of the design. Even if particular aspects of the design are associated with a functional purpose, they have ornamental contributions that cannot be excluded from the claimed design. Masimo's proposal is based on legal error. Additionally, Masimo improperly imports purported functionality from a commercial embodiment, ignoring that such functionality is not required or mentioned by the '936 patent, and ignoring the numerous alternative designs that can achieve the same or similar functionality.

1. Even if Particular Features are Associated with a Functional Purpose, They Contribute to the Overall Appearance of the Design and Cannot be “Factored Out”

As the Federal Circuit explained in *Sport Dimension*, “[w]hile we agreed that certain elements of the device were functional, their functionality did not preclude those elements from having protectable ornamentation.” *Sport Dimension, Inc. v. Coleman Co.*, 820 F.3d 1316, 1321 (Fed. Cir. 2016) (“in no case did we entirely eliminate a structural element from the claimed ornamental design, even though that element also served a functional purpose”). Masimo’s “construction in this case conflicts with that principle of design patent claim construction because it eliminates whole aspects of the claimed design.” *Id.*; Pet., 44 (“should be disregarded”); 45 (“should be disregarded”); 47 (“should be disregarded”); 57 (“should be disregarded”); 78; 80. Even if particular aspects of the claimed design can have a functional purpose (which Masimo fails to demonstrate), they are still significant to the overall ornamental appearance of the ’936 patent. Masimo’s assertions that these features be “factored out” is based on legal error and must be rejected.

The Petition conspicuously omits discussion of *Sport Dimension* and subsequent decisions highlighting that “in no case did [the Federal Circuit] entirely eliminate a structural element from the claimed ornamental design,” even if the element also served a functional purpose. *Sport Dimension*, 820 F.3d at 1321. Masimo engages in the same prohibited practice as the *Ethicon* District Court,

relying on a construction that “factored out” features from the claimed design. *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1328 (Fed. Cir. 2015) (reversing district court that “found that because each of the designs of the trigger, torque knob, and button must be ‘factored out’ under *Richardson v. Stanley Works*, . . . the Design Patents had no scope.”). It would be reversible error for the Board to do the same.

“[T]he claim construction in *Richardson* did not exclude those components in their entirety. Rather, the claim construction included the ornamental aspects of those components,” and “[a]s such, the language ‘dictated by their functional purpose’ in *Richardson* was only a description of the facts there; it did not establish a rule to eliminate entire elements from the claim scope.” *Apple Inc. v. Samsung Elecs. Co.*, 786 F.3d 983, 998 (Fed. Cir. 2105). Masimo’s legal error taints the entirety of its analysis, providing an independent reason that its construction is unsupportable. Each of the outermost continuous circle and outer circular shape provided by the arch-shaped portions has an ornamental contribution significant to the overall appearance of the claimed design. EX2001, ¶25.

Masimo’s claim construction is premised on a further legal error by asking the Board to consider each aspect of the claimed design separately. Contrary to Masimo’s assertions that particular aspects be “factored out,” the Federal Circuit has repeatedly explained that “design patents protect the *overall* ornamentation of a

design, not an aggregation of separable elements.” *Sport Dimension*, 820 F.3d at 1322. The features depicted by the ’936 patent’s claimed design must be considered together in view of the overall appearance achieved by the claimed features. EX2001, ¶¶20-23, 25. By “factoring out” structural elements from the claim, Masimo “improperly converted the claim scope of the design patent from one that covers the overall ornamentation to one that covers individual elements.” *Sport Dimension*, 820 F.3d at 1322. This is improper.

2. Masimo’s Focus on Functionalities of the Commercial Embodiment of the ’936 Patent Constitutes Legal Error

Masimo’s functionality discussion is based on yet another independent error. Masimo’s attempt to “factor out” aspects of the design is premised on purported functionality that is not required, or even mentioned, by the ’936 patent. Instead, Masimo’s functionality arguments improperly incorporate uses of an underlying commercial product into the design of ’936 patent. For example, Masimo’s functionality arguments are premised on the presence of wireless charging components located proximate the arch-shaped features. Pet., 26 (“the claimed arc-shaped portions’ design is also dictated by the need to ensure that the electrodes do not interfere with other Watch components.”); 18 (referring to “wireless charging” of a commercial product). But nothing in the ’936 patent tethers the claimed ornamental shapes to wireless charging components, or any other particular charging

component—the ’936 patent is directed to an “electronic device” without any requirement of wireless charging at all. *See Berry Sterling Corp. v. Pescor Plastics, Inc.*, 122 F.3d 1452, 1455 (Fed. Cir. 1997) (vacating summary judgment of invalidity on functionality because district court erred in considering functional limitations of commercial embodiment rather than the claimed design). Indeed, “the court cannot use the limitations of the commercial embodiment of the underlying article of manufacture to impose limitations on the scope of the design patent.” *Id.* Masimo’s functionality arguments are premised on features extraneous to the claimed design, rather than the actual features shown and described by the ’936 patent. *See id.* This is yet a further independent reason that Masimo’s claim construction is erroneous and cannot be adopted.

3. A Multitude of Alternative Designs Highlight the Ornamental Contributions of Features of the Claimed Design

There is no dispute that “[w]hether suitable alternative designs are available is ‘an important – if not dispositive – factor in evaluating the legal functionality of a claimed design.’” *Ethicon*, 796 F.3d at 1329-30; Pet., 11. Here, multiple suitable alternative designs exist as described below that provide the same or similar functionality. The elements of the ’936 patent contribute to its overall appearance, and cannot be “factored out.”

For example, the Aries AW80 watch is described as enabling measurement of ECG, heart rate tracking, and blood oxygen tracking, and uses a magnetic charging cable. *See* EX2003, 1, 5-6, 11, 13-16. The AW80 accomplishes its functionalities with a design that includes opposed shapes on either side of a central band including square and rectangular sensors, and thus has a rear face having an appearance significantly different than the '936 claimed design. EX2001, ¶¶25-27. Additional circle-shaped elements are positioned at the end of the central band, outside of a region of the opposed shapes. The design features, and resulting overall appearance, are fundamentally different than the '936 patent design. *Id.*



EX2003, 6-7.

As another example, the P11 Plus watch is described as enabling measurement of ECG, heart rate tracking, and blood oxygen tracking. *See* EX2004, 1-3. The P11

Plus accomplishes its functionalities with a design that includes three rectangular electrodes, such that its rear face has a significantly different appearance than the '936 claimed design. EX2001, ¶¶28-30.



EX2004, 3.

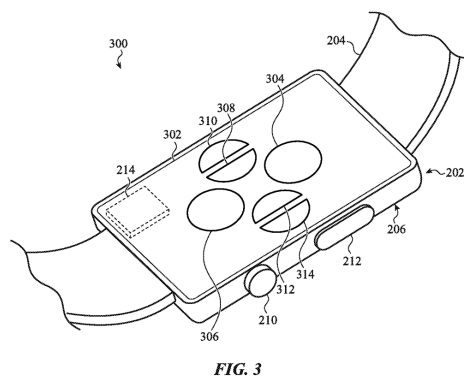
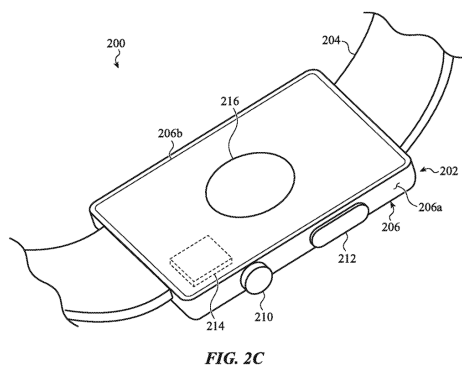
Simply put, there are alternative designs that accomplish the same or similar functions relied on by Masimo, while having a fundamentally different ornamental appearance. EX2001, ¶v25-30. The Petition is silent as to these alternative designs.

References cited by the Petition itself also confirm the existence of alternative designs as to each of the features identified by Masimo as purportedly functional, and confirm the features identified by Masimo contribute to the ornamental appearance of the claimed design. As discussed in further detail below, alternative

designs were known and available as to each of the elements of the '936 patent's design that Masimo contends should be factored out. EX2001, ¶¶30-35.

a) The Specific Arrangement of the Arch-Shaped Portions is Decorative and Contributes to the Unique Overall Appearance

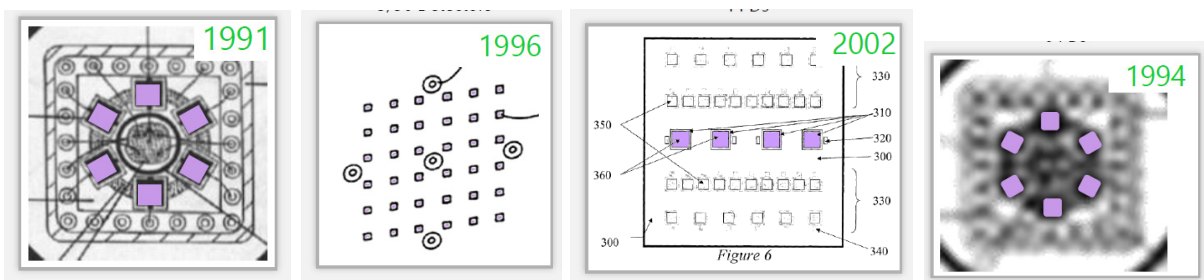
Masimo points to the '157 utility patent (U.S. 10,610,157) as explaining that the electrodes are “arc-shaped and positioned” and “sized” to achieve the functions of providing electrical contact between the electrodes and a wearer's skin. Pet., 24 (citing EX1024, 17:20-34; 13:54-59). The '157 patent itself, however, discloses multiple arrangements, shapes, and sizes of electrodes to achieve the stated purpose while having different appearances including a single rear-facing electrode (Fig. 2C), an arrangement of half-circle and circular electrodes (Fig. 3), or other arrangements. See EX1024, 17:24-34; EX2001, ¶¶31-33.



EX1024, Figs. 2C and 3.

b) The Overall Circular Shape is Decorative and Contributes to the Unique Overall Appearance

Masimo contends that the overall circular shape of the claimed sensor design is functional. Pet., 30-31. But, here again, Masimo's own citations demonstrate multiple suitable alternative designs having non-circular shapes. Regardless of whether or not circular shapes were "ubiquitous," the existence of alternative arrangements is a strong indicator that the circular design of the '936 patent contributes ornamentally to its overall appearance. EX2001, 34-35.



EX1038, 2-3 (figures excerpted).

C. Ground 1: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Paulke

The Petition entirely overlooks multiple elements that contribute to the overall appearance of the claimed design that are lacking from Paulke. Even if Paulke were modified as proposed by the Petition, the Petition fails to demonstrate the claimed design would result. Additionally, given the significant differences between Paulke and the claimed design, the Petition fails to demonstrate that Paulke is a proper *Rosen* reference. Even if it were, the Petition relies on layers of modifications that

significantly change Paulke’s appearance, and that are not depicted by Paulke, to recreate the claimed design. The Petition’s Ground 1 obviousness theories are woefully deficient, and the gaps in its analysis highlight that Masimo cannot demonstrate unpatentability of the design claim based on the evidence set forth in the Petition.

1. Paulke is Not a Proper *Rosen* Reference

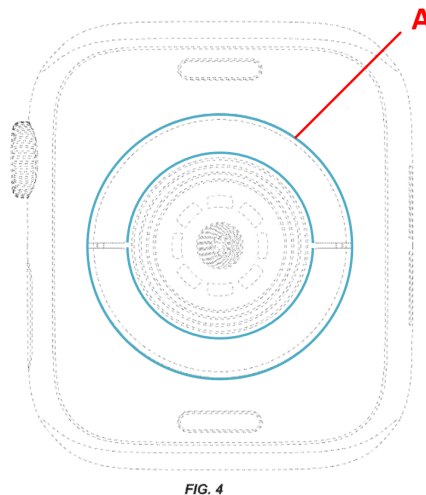
The Ground 1 obviousness theory is defective because the Petition fails to demonstrate that Paulke is a proper *Rosen* reference. Masimo’s obviousness theory is based on the flawed premise that “any differences between Paulke and the D’936 patent do not change the overall visual similarity of the designs.” Pet., 41. But in making this assumption, Masimo does not address multiple, prominent differences between the claimed design and Paulke, such as the claimed design’s outermost continuous circle and its relationship to other features of the design, as noted above. The multiple, readily apparent differences between Paulke and the claimed design, and the layers of intermediate modifications proposed in an attempt to reach the claimed design, confirm that the Petition fails to demonstrate Paulke is a “single reference that creates basically the same visual impression.” *Levitation Arts, Inc. v. Flyte LLC*, PGR2018-00073, Paper 14, 16-22 (PTAB, Jan. 17, 2019) (denying institution in part because “claimed design includes ornamental features that are entirely absent or significantly different in the [prior art] design”); *Dorman Products*

Inc. v. PACCAR Inc., IPR2014-00542, Paper 10 at 5 (PTAB Sept. 5, 2014) (denying institution); *In re Harvey*, 12 F.3d 1061, 1063 (Fed. Cir. 1993) (“Because major modifications would be required to make Harvey’s prior art vase look like the claimed designs, it cannot qualify as a basic design.”).

The obviousness analysis generally involves two steps: first, “one must find a single reference, a something in existence, the design characteristics of which are basically the same as the claimed design”; second, “once this primary reference is found, other references may be used to modify it to create a design that has the same overall visual appearance as the claimed design.” *High Point Design, LLC v. Buyers Direct, Inc.*, 730 F.3d 1301, 1311 (Fed. Cir. 2013) (internal quotation and citations omitted). In performing the first step of the obviousness analysis, we must “(1) discern the correct visual impression created by the patented design as a whole; and (2) determine whether there is a single reference that creates basically the same visual impression.” *Id.* at 1312 (internal quotation omitted). The Petition fails to address multiple differences—and the significance of these differences to the overall appearance—and thus lacks any sufficient evidence that Paulke is “a single reference that creates basically the same visual impression” as the claimed design. *High Point Design*, 730 F.3d at 1314.

a) Masimo Fails to Properly Analyze the Outermost Continuous Circle

The Petition fails to address the outermost continuous circle of the claimed design, and its contribution to the overall appearance, in its Ground 1 analysis. *See*, Pet., Ground 1. The outermost continuous circle encompasses the other features of the claimed design and sets the tone of its concentric circular overall impression. EX2001, ¶¶36-38. For example, the outermost continuous circle of the claimed design (annotated “A” below) surrounds the outer circular shape formed by the arches. It encompasses the arches and provides a visual continuity that is mimicked by the inner edges of the arches, for example. EX2001, ¶38.



EX2001, ¶39 (EX1001, Fig. 4 (annotated)).

Masimo fails to address this aspect of the claimed design in its Ground 1 analysis. The Petition’s annotations of Paulke ignore this aspect, which does not

depict such an outermost continuous circle near its opposed shapes. EX2001, ¶¶40-41.

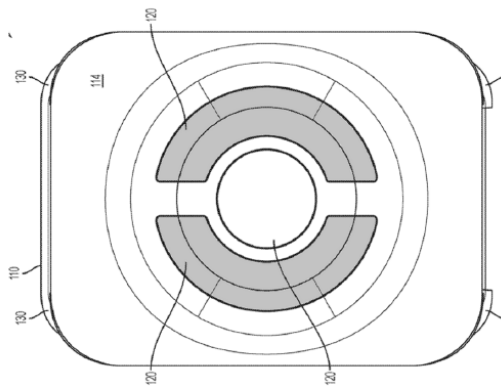


FIG. 1G (rotated)

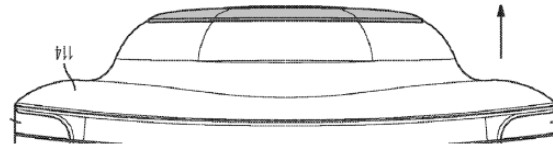


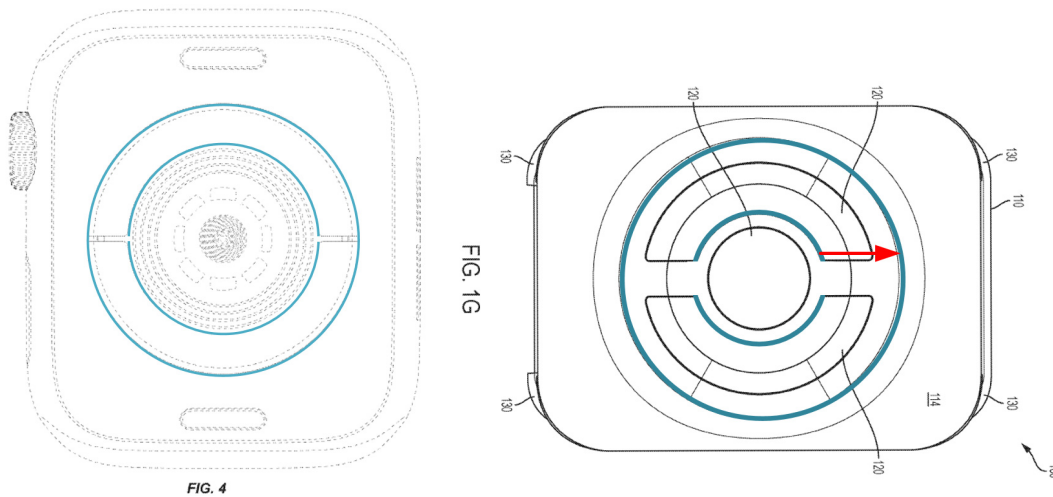
FIG. 1D (rotated)

Pet., 44, 48 (EX1006, FIGS. 1G, 1D).

Moreover, Masimo ignores the specific appearance provided by the relationship between the outermost continuous circle and the outer circular shapes provided by the arches. For example, by ignoring the outermost continuous circle altogether, Masimo fails to address the overall concentric circle impression of the claimed design. EX2001, ¶42. Additionally, Masimo neglects to address the position of the outermost continuous circle relative to the inner edge of the arch-shapes. Each of these is spaced from the other and highlights an elegant and well-proportioned appearance. *Id.*

**b) Masimo Fails to Properly Analyze the Arch Shapes
Relative to the Outermost Continuous Circle**

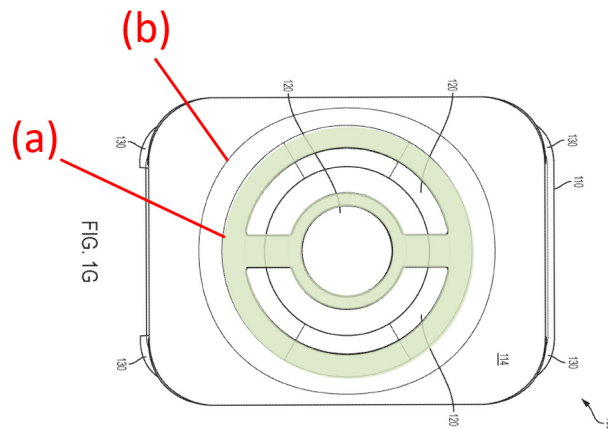
Masimo fails to address the relationship between the arch shapes and the size of the outermost continuous circle in the '936 patent, which depicts a readily apparent thickness of the arches that is relatively small compared to the diameter of the circle traced by the outermost continuous circle. EX2001, ¶43. The small thickness relative to the diameter contributes to the overall appearance of the claimed design as an elegant and streamlined concentric circle appearance, rather than a bulky assembly of shapes.



EX2001, ¶43(Left: EX2001, Fig. 4 (annotated); Right: EX1004, Fig. 1G (rotated, annotated)).

Masimo ignores this aspect of the claimed design and its contribution to the overall appearance. In contrast to the claimed design, Paulke's opposed shapes have a much thicker appearance.

Indeed, the Petition fails to demonstrate Paulke has an outermost continuous circle at all. To the extent Masimo relies on radius lines in Paulke's drawing (which the Petition never mentions), Paulke's opposed shapes are spaced inwardly significantly from both the intermediate (a) and outer (b) lines, here again conveying a different overall appearance that lacks the streamlined, well-proportioned appearance of the claimed design. Moreover, Paulke's outer line is not a circle at all, instead slightly depressed inwardly such that it has an elliptical or oval shape. EX2001, ¶44; EX1006, FIGS. 1D and 1G.



EX2001, ¶44 (EX1004, Fig. 1G (rotated, annotations and highlighting added)).

Given these omissions in Masimo's analysis, even if Paulke were altered as proposed in the Petition (Pet., 49-52), the Petition offers no reasoned analysis why the result would be substantially identical to the claimed design in view of the other prominent differences. Contrary to the Petition's assertion, the result would lack

readily apparent features that contribute to the overall appearance of the claimed design.

c) Masimo Fails to Properly Analyze the Arches of the Claimed Design in Comparison to Paulke

Masimo’s assertion that “the arc-shaped portions of Paulke and the D’936 Patent provide the same overall visual impression” fails to address readily visible differences that are significant to the overall appearance of the claimed design. Pet., 44. The ’936 patent includes an outer circular shape provided by unified arches. *Supra*, §IV.A. The ends of each arch are positioned so as to provide a unified circular appearance. *Id.* As discussed above, the thickness of the arches from the inner edge of the arch to the outermost continuous circle is relatively small, contributing to the appearance of an elegant and streamlined outer circular shape. *Id.*

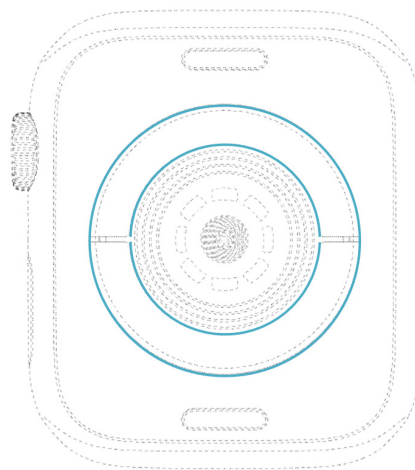


FIG. 4

EX2001, ¶48 (EX1001, Fig. 4 (annotated)).

In contrast to the '936 patent's design, Paulke depicts opposed shapes spaced apart from one another and having a relatively larger thickness. Paulke's features provide an appearance of two separate, opposed shapes that differs prominently from the '936 patent's arches that evoke an overall concentric circle appearance. EX2001, ¶¶46-50.

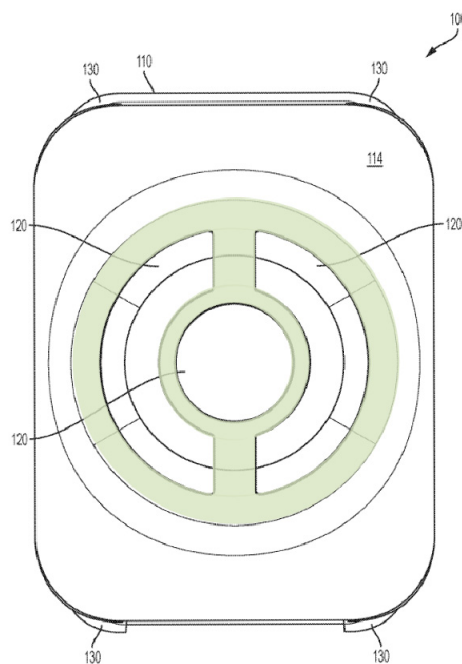


FIG. 1G

EX2001, ¶49 (EX1006, Fig. 1G (highlighted)).

As discussed above, Paulke's opposed shapes are meaningfully wider than the claimed arches of the '936 patent, with the inner edge of Paulke's opposed shapes spaced a substantial distance inwardly (e.g., relative to radius lines depicted in Fig. 1G), and the width of Paulke's curved shapes extend across a significant portion of the surface of Paulke's sensor body. These prominently visible features provide a

different overall appearance that is bulky and dominated by the opposed curved shapes, rather than the streamlined, elegant concentric circle appearance of the '936 patent. Masimo ignores this aspect of the claimed design, and its contribution to the overall appearance.

Masimo acknowledges that “Paulke’s arc-shaped portions are spaced slightly farther apart than the claimed design” but merely concludes “that difference, or any difference in the size, shape, or spacing of the arc-shaped portions of Paulke and the claimed design, does not alter the overall visual similarity of these designs.” Pet., 45. Here again, Masimo never addresses the contribution of these prominent features on the overall appearance of the claimed design, ignoring the visual appearance of the concentric circles of the claimed design that is lacking from the greater separation of the opposed arch-shaped components of Paulke. This is not a matter of degree—the Paulke arch-shaped components have the appearance of two separate features rather than the unified circular appearance of arches of the '936 patent. EX2001, ¶¶51-52.

The Petition cites paragraphs 60-61 of the Delman Declaration, but these paragraphs parrot the petition without any additional underlying explanation. *Compare* EX1003, 60-61 *with* Pet., 44-45. Such an “*ipse dixit* declaration” is insufficient and does nothing to remedy the Petition’s deficient analysis. *TQ Delta*,

LLC v. Cisco Sys., 942 F.3d 1352, 1362-64 (Fed. Cir. 2019) (refusing to give weight to petitioner’s “*ipse dixit* declaration”).

Here again, Masimo’s analysis is fatally deficient, ignoring meaningful features of the claimed design that differ in comparison to Paulke.

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Paulke To Create the Claimed Design

Masimo acknowledges multiple additional modifications to provide features beyond that depicted by Paulke, tacitly acknowledging Paulke’s actual appearance fails to achieve the claimed design. Pet., 49-52. But these additional modifications are directed to features that are not depicted by Paulke and are not trivial or *de minimis*. *Supra*, §IV.A. The proposed modification fails for this additional reason.

The deficiencies discussed above are not remedied by Masimo’s reliance on purported utility motivations. A primary reference can properly be modified by a secondary reference in a design patent context if they are so related that the *appearance* of certain ornamental features in one reference would have *suggested application of those features to another*. *In re Rosen*, 673 F.2d 388, 213 U.S.P.Q. (BNA) 347 (CCPA 1982). Simply stated, when determining obviousness of a design patent claim, “the focus must be on appearances and not uses.” *See Harvey*, 12 F.3d at 1064 (reversing Board’s obviousness determination where “the Board improperly mixed principles of obviousness for utility patents with those for ornamental design

patents.”); *In re Sung Nam Cho*, 813 F.2d at 382 (reversing Board’s obviousness determination that analyzed design patent “as if it were the subject of an application for a utility patent”); *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than ornamental appearance, and indicating “the Federal Circuit has made clear that the motivation to modify one design with another is limited to whether the articles are ‘so related’ (*i.e., so similar in appearance*)”).

Here, Masimo ignores this well-established principle of design patent law, embarking on a multi-layered series of modifications based on purported utility considerations. Pet., 49-52. For example, Masimo’s proposal to “extend the ends of the Paulke’s . . . arc-shaped electrodes closer together” or “shaped to avoid interference” is unsupported by any aspect related to the appearance. Pet., 50. This is improper and fails to satisfy Masimo’s burden. *See Termax*, IPR2022-00106, Paper 7 at 29; EX2001, ¶¶53-54.

D. Ground 2: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Yuen in View of Mendelson and Bushnell

1. Yuen is Not a Proper *Rosen* Reference

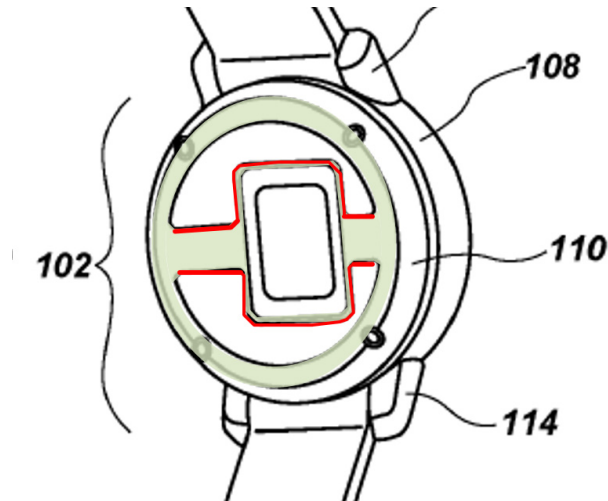
The Ground 2 obviousness theory is defective because the Petition fails to demonstrate that Yuen is a proper *Rosen* reference. Masimo’s obviousness theory is based on the flawed premise that “any differences between Yuen and the D’936 patent do not change the designs’ overall visual similarity.” Pet., 54. But in making this assumption, Masimo fails to specifically address the asymmetric and squarish

opposed shapes of Yuen that provide a markedly different overall appearance and that independently disqualify Yuen as a *Rosen* reference. Moreover, the Petition fails to address additional prominent differences between the claimed design and Yuen, such as the claimed design's arches that form an outer circular shape within an outermost continuous circle, contributing to a concentric circular appearance. The multiple, readily apparent differences between Yuen and the claimed design, some of which are wholly unaddressed by the Petition, confirm that the Petition fails to demonstrate Yuen is a "single reference that creates basically the same visual impression." *Dorman Products*, IPR2014-00542, Paper 10 at 5; *In re Harvey*, 12 F.3d at 1063.

a) Masimo Fails to Properly Analyze the Arches of the Claimed Design in Comparison to Yuen

In contrast to the '936 patent's design, Yuen depicts asymmetrical, squarish shapes that are spaced apart from one another in an opposed relationship. These features provide an immediately apparent overall appearance different from the appearance of concentric circles resulting from the arches of the claimed design. EX2001, ¶¶55-58. Yuen is plainly different than the claimed design, and not a *Rosen* reference, for this independent reason.

Yuen's opposed shapes are *asymmetrical*. For example, the left side of the shapes is notably wider than the right side of the shapes (e.g., as shown in FIG. 1B).

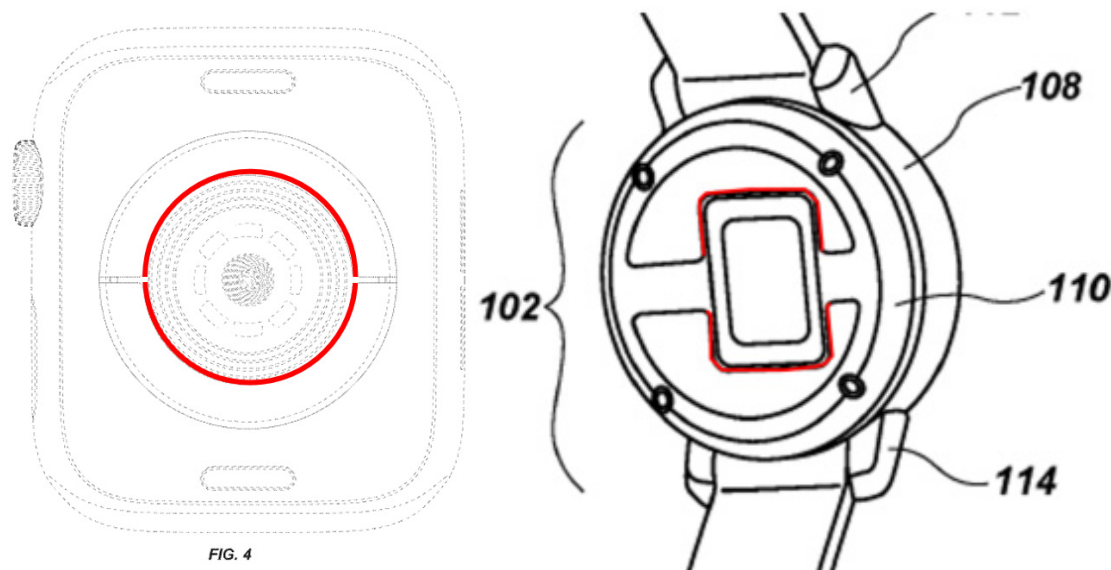


EX2001, ¶57 (EX1007, Fig. 1B (excerpted, annotated)).

The asymmetric appearance is not just a result of the perspective shown in Fig. 1B—Masimo admits elsewhere in the Petition that Yuen’s shapes are asymmetric. *See*, Pet., 66 (“Yuen’s asymmetrically located PPG sensor”). EX2001, ¶58.

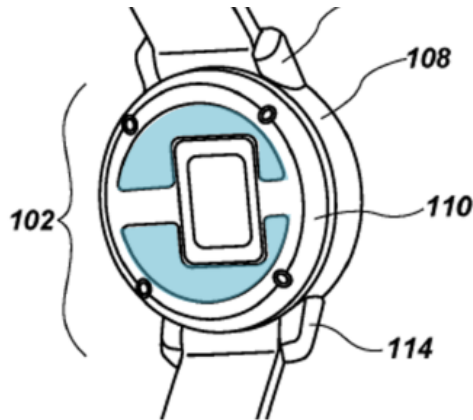
Additionally, Yuen’s opposed shapes are not arch-shaped but instead have a square, off-center cut-out. The inner edge of the opposed shapes are not curved or

circular at all, and certainly do not evoke an appearance of concentric circles.



EX2001, ¶59 (Left: EX1001, Fig. 4 (annotated); EX1007, Fig. 1B (excerpted, annotated)).

As yet a further prominent difference, Yuen's features provide an appearance of two separate, opposed shapes. Yuen's shapes are meaningfully wider than the arches of the claimed design, and the ends are separated by a relatively large gap. These prominently visible features provide a different overall appearance that is bulky and dominated by the opposed shapes, rather than the streamlined, elegant concentric circle appearance of the '936 patent. EX2001, ¶60. Masimo ignores these aspects of the claimed design, and the differing appearance of Yuen's shapes.



EX2001, ¶60 (EX1007, Fig. 1B (excerpted, annotated)).

The above deficiencies are not remedied by Masimo’s acknowledgement that “Yuen’s arc-shaped portions have a slightly different shape and spacing than in the claimed design.” Pet., 57-58. Masimo merely concludes “that difference, or any difference in the size, shape, or spacing of the arc-shaped portions of Yuen and the claimed design, does not alter the overall visual similarity of these designs,” without following this assertion with any analysis of these differences or why they purportedly do not alter the overall visual appearance. *Id.* Here again, Masimo never addresses the contribution of these prominent features on the overall appearance of the claimed design, ignoring the visual appearance of the concentric circles of the claimed design that is lacking from Yuen’s squarish shapes. To be clear, these differences are not a mere matter of degree—Yuen’s opposed shapes are asymmetric and squarish, immediately contrasting with the ’936 patent’s arches and its overall appearance. EX2001, ¶61.

Masimo's analysis is fatally deficient for this independent reason.

b) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches of the Claimed Design in Comparison to Yuen

Masimo's obviousness theory ignores the different overall appearance flowing from the claimed design's outermost continuous circle and the relationship between the outermost continuous circle and outer circular shape within the outermost continuous circle formed by the arches. As described above, the outermost continuous circle encompasses the other features of the claimed design and sets the tone of the concentric circular overall impression. *See supra* §IV.A.

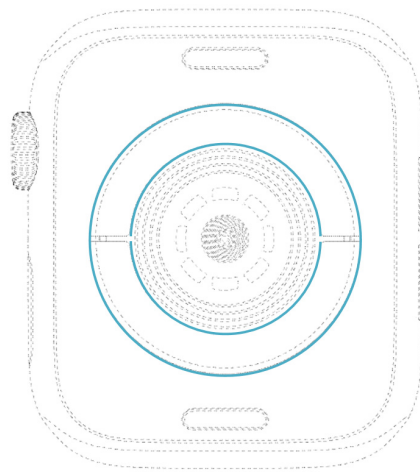
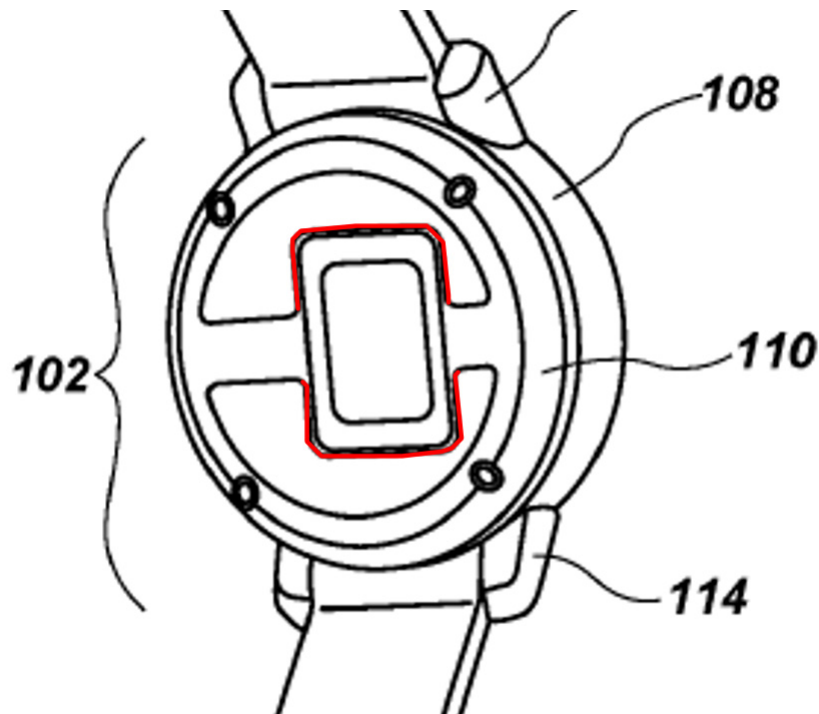


FIG. 4

EX2001, ¶62 (EX1001, Fig. 4).

The Petition's analysis of Ground 2 is silent as to this outermost continuous circle shape and its contribution to the overall appearance of the claimed design, and fails to address the outermost continuous circle in its comparison to Yuen. Masimo

neglects to address the position of the outermost continuous circle relative to the inner edges of the arches of the claimed design. While the outermost continuous circle and inner edge of the arches of the claimed design are spaced from the other to highlight an elegant and streamlined appearance associated with relatively thin, elongate arches, Yuen depicts thick, squarish, opposed shapes that entirely lack a ring-like appearance.

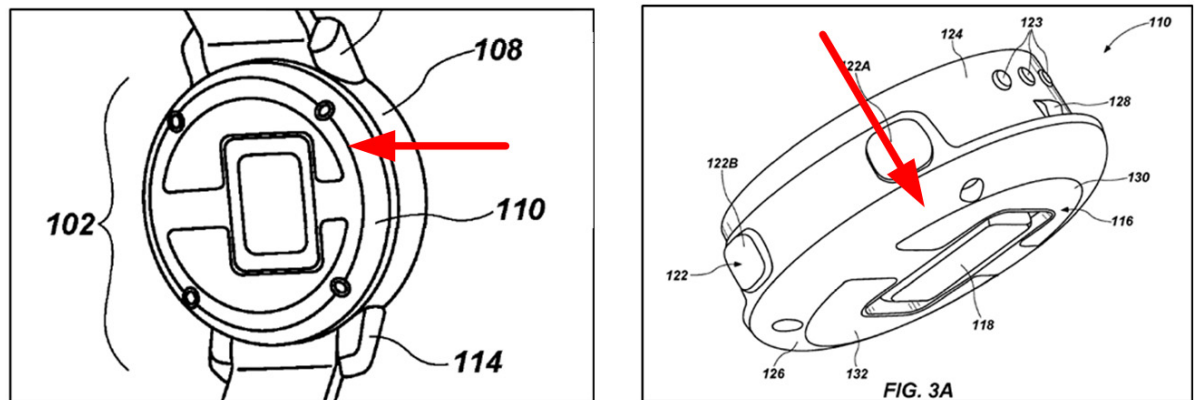


EX2001, ¶63 (EX1007, Fig. 4 (excerpted, annotated)).

Masimo also fails to address the relationship between the arches of the claimed design and the size of the outermost continuous circle (e.g., the “thickness” of the arches). EX2001, ¶64. The small thickness relative to the diameter of the outermost continuous circle contributes to the overall appearance of the claimed

design as an elegant and precise series of concentric circles, rather than a bulky assembly of shapes.

In contrast to the claimed design, Yuen's opposed shapes have a much thicker and imprecise appearance.



EX2001, ¶64 (EX1007, Figs. 1B and 3A (excerpted, annotated)).

To the extent Masimo relies on the line delineating the back face of the watch in Fig. 1B (which the Petition never mentions), Yuen's Fig. 3A confirms that this line merely represents curvature of the rear surface of the watch. Additionally, Yuen's opposed shapes are spaced inwardly significantly from this line, here again conveying a different overall appearance that lacks the streamlined, well-proportioned appearance of the claimed design. EX2001, ¶65.

Because the Petition has failed to provide any explanation that accounts for these visible differences, Masimo has not demonstrated that Yuen is "a single reference that creates basically the same visual impression" as the claimed design.

High Point Design, 730 F.3d at 1314; *Harvey*, 12 F.3d at 1063 (“Because major modifications would be required to make Harvey’s prior art vase look like the claimed designs, it cannot qualify as a basic design.”). The Petition is thus insufficient to establish that Yuen is an appropriate primary reference, and therefore fails to demonstrate a reasonable likelihood that it would prevail in showing that the design claim is rendered obvious under Ground 2 for this additional reason.

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Yuen in View of Mendelson and Bushnell To Create the Claimed Design

a) Mendelson is Not a Proper Secondary Reference for Combination with Yuen

The Petition fails to demonstrate that Mendelson’s sensor design is “so related” to Yuen that “the appearance” of certain ornamental features in Mendelson would suggest the application of those features to Yuen. *Glavas*, 230 F.2d at 450.

Masimo relies on Yuen’s description that its device can include “any PPG sensor 118 known in the art” and Mendelson’s sensor as evidence that Mendelson is “so related” to Yuen’s design. Pet., 61 (“Mendelson is so related to Yuen because it discloses a suitable sensor for Yuen’s design”). In doing so, Masimo improperly focuses on Mendelson’s use as a sensor rather than the visual appearance of Mendelson and Yuen, which have virtually no overlap in appearance. *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than

ornamental appearance, and indicating “the Federal Circuit has made clear that the motivation to modify one design with another is limited to whether the articles are ‘so related’ (*i.e., so similar in appearance*)”). In contrast to Mendelson’s arrangement of pairs of rectangles, Yuen lacks any corresponding rectangular shape. EX2001, ¶¶66-67. Likewise, while Mendelson has a circular perimeter shape and radially-symmetric arrangement of rectangles, Yuen has a squarish arrangement between opposed, asymmetric shapes. *Id.*

The appearance of Mendelson, having a radial arrangement of rectangles surrounding a central circular shape, lacks features similar to Yuen. EX2001, ¶¶67-68. In view of these prominent differences, and the lack of visually similar features, Masimo has failed to satisfy its burden of demonstrating the references are “so related that the appearance of certain ornamental features in one would suggest the application of those features to the other.” *Glavas*, 230 F.2d at 450. Instead, there is no suggestion to incorporate the features of Mendelson into Yuen’s device based on their appearances.

To be clear, Masimo’s reliance on the presence of a “PPG sensor” in Yuen and “suitable sensor” in Mendelson is alone insufficient to demonstrate Yuen and Mendelson are “so related” as to suggest application of Mendelson’s arrangement of rectangle shapes into Yuen. Pet., 61. Nothing in Mendelson’s symmetrical radial arrangement suggests application to Yuen’s offset/asymmetrical sensor. The mere

presence of a space in Yuen's design described as providing the function/use of a sensor is insufficient to suggest application of the specific ornamental appearance of Mendelson, except for improper use of the claimed design as a roadmap. *Premier Gem*, IPR2016-00434, Paper 9 at 16; *L.A. Gear*, 988 F.2d at 1124 ("Not only the individual elements, but the ornamental quality of the combination must be suggested in the prior art. . . . A reconstruction of known elements does not invalidate a design patent, absent some basis whereby a designer of ordinary skill would be led to create this particular design.").

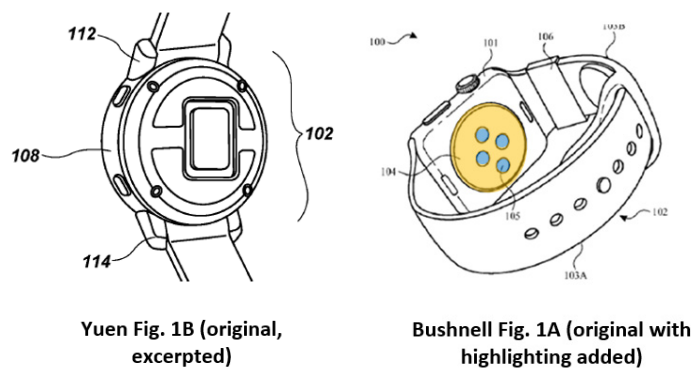
b) Bushnell is Not a Proper Secondary Reference for Combination with Yuen

Bushnell's rear face shape design is significantly different than Yuen, such that the references are not "so related that the appearance of certain ornamental features in one would suggest the application of those features to the other." *Glavas*, 230 F.2d at 450. Masimo fails to demonstrate any suggestion in the designs' appearances to incorporate the features of Bushnell into Yuen's design.

Bushnell's rear face has a circular feature protruding from the center of a generally squarish body. *See* EX1009, Figs. 1A, 2A. In contrast, Yuen's rear face is circular with a convex portion at the outer perimeter edge. *See* EX1007, Fig. 3A. Moreover, the positioning of any raised portion is also different, with Bushnell's raised circular feature being positioned on the relatively square, flat rear face and

Yuen's circular face including a curved perimeter edge with no raised feature positioned on the face surface. EX2001, ¶69.

Further, as illustrated below, Bushnell's rear face does not include visual elements similar to the opposed, asymmetrical shapes and offset rectangular portion of Yuen. EX2001, ¶70.



EX2001, ¶70 (EX1007, Fig. 1B (excerpted); EX1009, Fig. 1A (annotated)).

In view of these unaddressed differences between Yuen and Bushnell, Masimo fails to satisfy its burden of demonstrating the references are so related in appearance as to suggest the incorporation of features from Bushnell into Yuen's design. EX2001, ¶70.

The above deficiencies are not remedied by Masimo's assertion that "Bushnell is so related to Yuen because it discloses a suitable design for Yuen's device," and that "both references concern a circular, convex surface that protrudes from the back of the wrist-worn device and incorporates the device's sensors." Pet.,

63-64. Contrary to Masimo’s characterization, Yuen’s alleged “circular convex surface” *is* the back of the wrist-worn device—it does not protrude from the back surface. EX2001, ¶71. Masimo further asserts that “Bushnell and Yuen are further related because Yuen expressly suggests using any known PPG sensor ... which Bushnell discloses.” Pet., 64. As described above with regard to Mendelson, Masimo’s reliance on the presence of a PPG sensor, and any components of such a sensor, fail to demonstrate the *appearance* of Yuen and Bushnell are “so related” as to suggest application of Bushnell’s convex protruding surface to Yuen. *Termax*, IPR2022-00106, Paper 7 at 29. Here again, the prominent differences in appearance, with almost no visual similarity, confirm the improper hindsight nature of Masimo’s analysis. *L.A. Gear*, 988 F.2d at 1124.

c) Masimo Fails to Demonstrate the Proposed Series of Modifications Would Have Been Obvious to a DOSA

Masimo acknowledges multiple additional modifications to provide features beyond that depicted by Yuen, Mendelson, or Bushnell, tacitly acknowledging that the proposed combination fails to achieve the claimed design. Pet., 73 (citing Pet., §VI.B.2). But these additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶72. The proposed modification fails for this additional reason, as described above (*supra*, Ground 1 Analysis, IV.C.1.d). *See Harvey*, 12 F.3d at 1065.

For example, Masimo fails to demonstrate a DOSA would have further modified the proposed Yuen/Mendelson/Bushnell combination to achieve the specific appearance of the claimed design such that the opposed shapes have curved inner edges. The Petition does not rely on illustrations of Yuen, Mendelson, or Bushnell, for this modification. Indeed, the Petition's analysis is undermined by the internal shape delineated by the inner edges of Yuen's opposed shapes, which do not form a curved or circular shape, but rather a rectangular shape. The Petition asserts that a DOSA would have modified Yuen "to achieve an overall symmetric sensor surface," ignoring that Yuen depicts an asymmetric appearance that would be fundamentally altered by this proposed modification. EX2001, ¶¶72-75.

The deficiencies discussed above are not remedied by Masimo's improper reliance on motivations based on purported functionality of underlying technologies rather than the actual appearances of the designs. Pet., 66-67, 69-70. The teachings of references can properly be combined in a design patent context if they are so related that the *appearance* of certain ornamental features in one reference would have suggested application of those features to another. *Rosen*, 673 F.2d 388. Masimo ignores this well-established principle of design patent law, embarking on a multi-layered series of modifications based on purported utility considerations. See Pet., 66-70. Masimo's analysis based on utility considerations does nothing to address the requisite standard of whether the appearance of certain

ornamental features in one reference would have suggested application of those features to another and does not address the specific ornamental contributions of the claimed design. Flouting the requisite analysis, Masimo alleges a motivation based on Yuen’s description regarding sensor utility, but even if true, such an analysis fails to demonstrate a DOSA would have modified Yuen to have a specific ornamental appearance, as described above. *See Termax*, IPR2022-00106, Paper 7 at 29.

E. Ground 3: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Fong in View of Mendelson and Bushnell

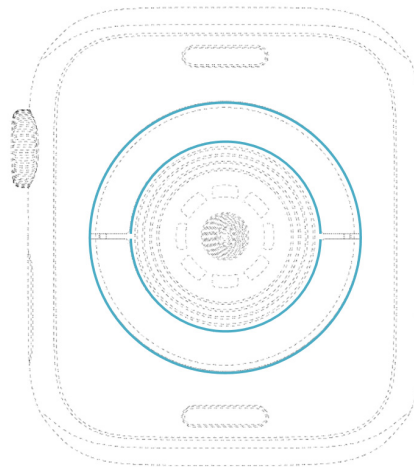
1. Fong is Not a Proper *Rosen* Reference

The Petition fails to demonstrate that Fong is a proper *Rosen* reference, rendering Ground 3 fatally defective. Masimo’s obviousness theory is based on the flawed premise that “any differences between Fong and the D’936 patent do not change the overall visual similarity of the designs.” Pet., 75-76. But the Petition here again fails to specifically address significant aspects of Fong, such as the spacing between Fong’s opposed shapes that include interposed circular elements separating the shapes, which yield a markedly different overall appearance. Moreover, the Petition fails to address other prominent differences between the claimed design and Fong, such as the claimed design’s arches that form an outer circular shape within an outermost continuous circle and that provide a concentric circular appearance. The prominent differences between Fong and the claimed design, some of which are wholly unaddressed by the Petition, confirm that the

Petition fails to demonstrate Fong is a “single reference that creates basically the same visual impression.” *Levitation Arts*, PGR2018-00073, Paper 14, 16-22; *Dorman Products*, IPR2014-00542, Paper 10 at 5; *Harvey*, 12 F.3d at 1063.

a) Masimo Fails to Properly Analyze the Arches of the Claimed Design in Comparison to Fong

As discussed above, the claimed design includes unified arch shapes forming an outer circular shape that contribute to the '936 design's overall appearance of well-proportioned concentric circles. *Supra*, §IV.A; EX2001, ¶¶76-77.

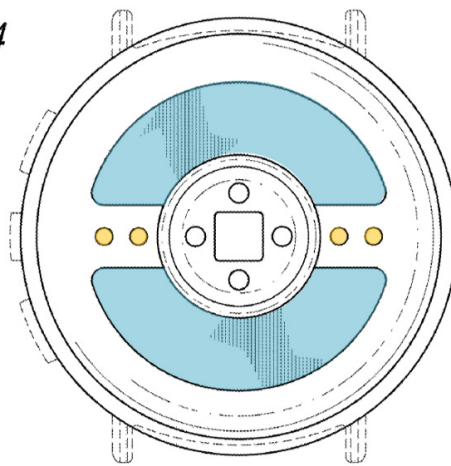


EX2001, ¶78 (EX1001, Fig. 4 (annotated)).

In contrast to the '936 patent's design, Fong depicts wide, opposed shapes (blue) separated from one another at the ends by a significant gap that provides an appearance of opposed, divided shapes. EX2001, ¶77. Moreover, this separation is visually highlighted by the presence of multiple circular elements (yellow). In particular, two circular elements are positioned between each end of the opposed

shapes (e.g., as shown in Fig. 4). These circular elements are significant to Fong's appearance, aligned with two additional circular elements and the central square. Together, the circular elements and central square extend across the entire width of the opposed shapes and visually divides the design into upper and lower portions (blue) separated by a middle row of the circle and square elements. EX2001, ¶77.

FIG. 4



EX2001, ¶77 (EX1008, Fig. 4 (highlighting added)).

Far from the unified, outer circular shape of the claimed design, Fong's round elements separating ends of the two opposed shapes highlight the distinct and opposed appearance of Fong's shapes. EX2001, ¶78.

The differences in the visual appearance of Fong compared to the '936 patent are not a mere matter of degree. Fong's opposed shapes are spaced apart from one another not only by a large space, but by additional elements interposed in this space

that are significant to Fong's different appearance. EX2001, ¶¶78-81. Masimo fails to specifically address these aspects of Fong, which plainly lacks an appearance that is "basically the same" as the overall appearance of continuous concentric circles provided by the '936 patent.

Masimo's Ground 3 analysis is fatally deficient for this independent reason.

b) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches of the Claimed Design in Comparison to Fong

The overall appearance of concentric circles of the claimed design is provided in part by the outermost continuous circle, and the relationship between the outermost continuous circle and the outer circular shape within the outermost continuous circle formed by the arches. *Supra*, §IV.4.

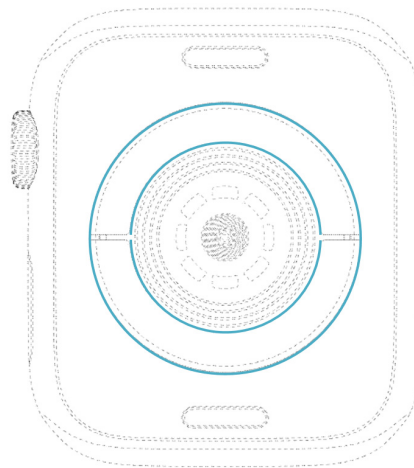


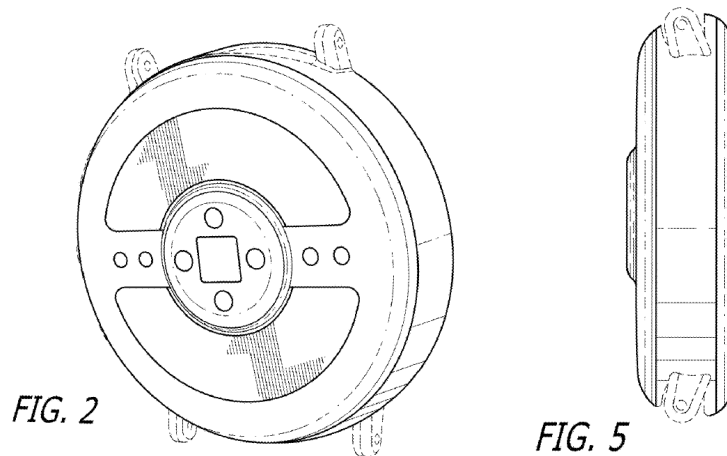
FIG. 4

EX2001, ¶¶82 (EX1001, Fig. 4 (annotated)).

The Petition fails to address the outermost continuous circle in its comparison

to Fong, never identifying such a feature in Fong at all. Likewise, the Petition does not address the different overall appearance of Fong that lacks the series of continuous and concentric circles provided by the outermost continuous circle and arch shapes.

Fong's design includes opposed shapes surrounding a raised circular central portion, and lacks any continuous outer circle proximate Fong's opposed shapes.

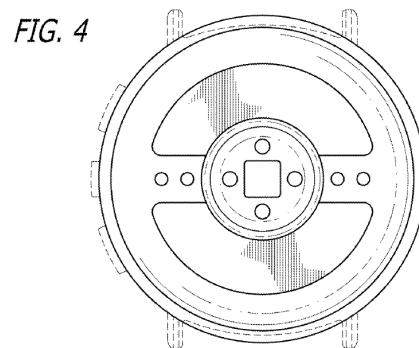


EX1008, Figs. 2 and 5.

The lack of outermost continuous circle in Fong's design is not trivial or *de minimis*—it goes to a fundamental aspect of Fong in which top and bottom portions are divided by a central portion that includes a row of small circles and a central square that extend across the back of the device. EX2001, ¶¶82-85. Unlike the claimed design, Fong's opposed features are visibly separated and not encompassed by a closely-proximate outermost continuous circle. *Id.*

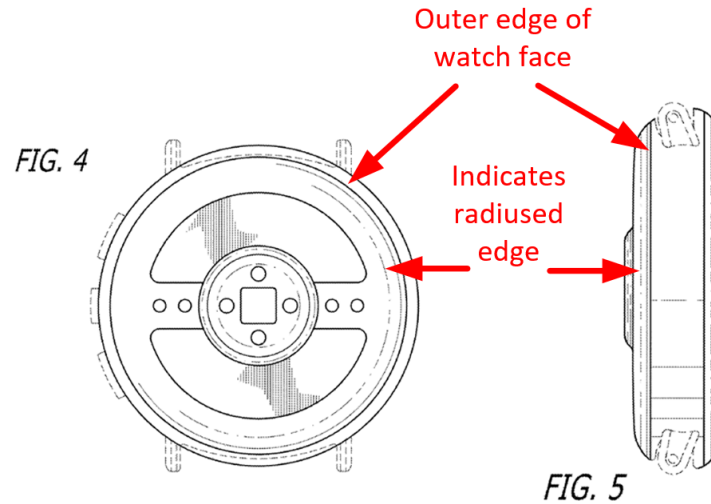
Additionally, the Petition ignores the claimed design's position of the outermost continuous circle relative to the inner edge of the arches. Each of these features are spaced from the other to highlight elegant circles of decreasing size.

In contrast, Fong's opposed shapes have a much thicker appearance, and Fong altogether lacks an outermost continuous circle in close proximity to the opposed shapes. EX2001, ¶86.



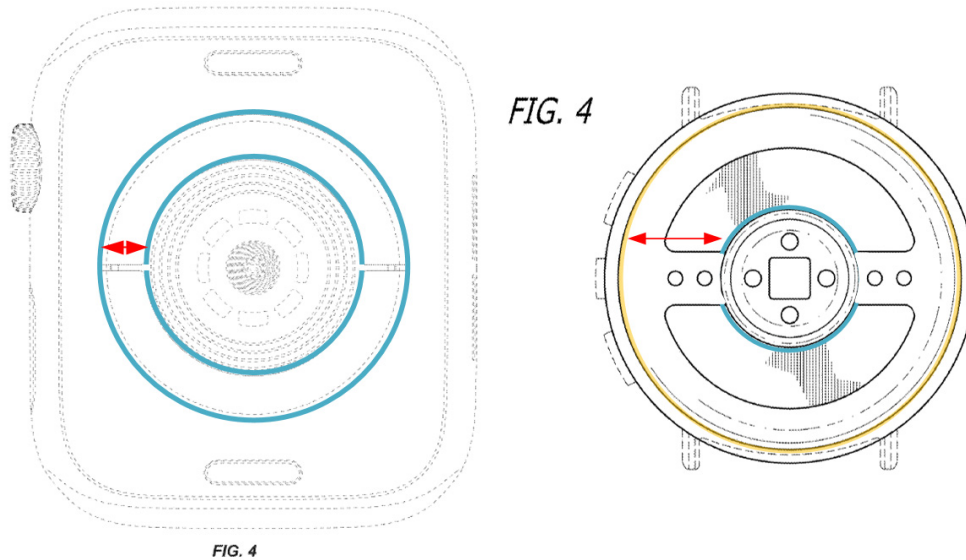
EX1008, Fig. 4.

To the extent Masimo relies on the circle delineating the back face of the watch in Fig. 4 (which the Petition never mentions), Fong's Fig. 2 makes clear that this line is included merely to show the edges of the curved rear surface of the watch.



EX2001, ¶87 (EX1008, Figs. 4 and 5 (annotated)).

Additionally, Fong's opposed shapes (inner edges in blue, below) are spaced significantly inwardly from the line included in Fig. 4 (yellow, below), here again conveying a different overall appearance that lacks the streamlined, well-proportioned appearance of the claimed design. EX2001, ¶89.



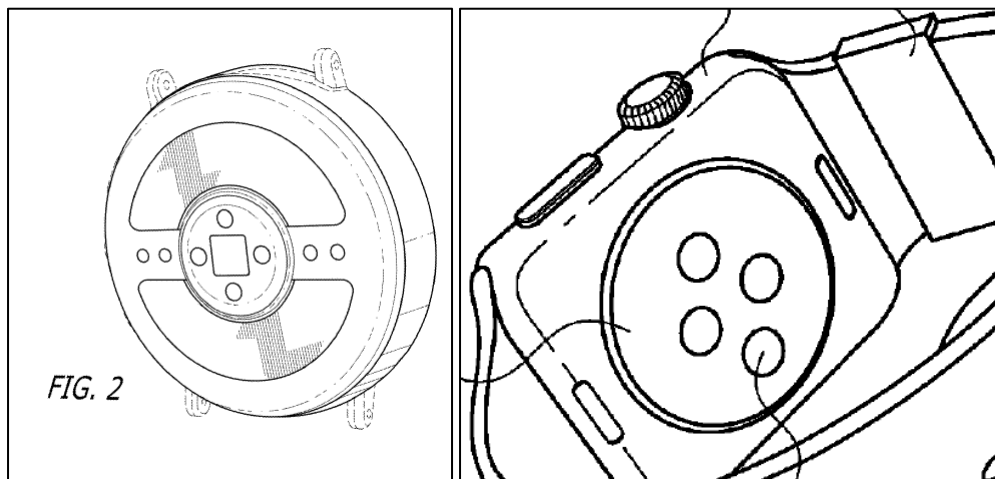
EX2001, ¶89 (Left: EX1001, Fig. 4 (annotated); Right: EX1008, Fig. 4 (annotated)).

Because the Petition has failed to provide any explanation that accounts for these visible differences, Masimo has not demonstrated that Fong is “a single reference that creates basically the same visual impression” as the claimed design. *High Point Design*, 730 F.3d at 1314; *Harvey*, 12 F.3d at 1063 (“Because major modifications would be required to make Harvey’s prior art vase look like the claimed designs, it cannot qualify as a basic design.”); EX2001, ¶90. The Petition is thus insufficient to establish that Fong is an appropriate primary reference, and therefore fails to demonstrate a reasonable likelihood that it would prevail in showing that the design claim is rendered obvious under Ground 3 for this independent reason.

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Fong in View of Bushnell To Create the Claimed Design

a) Masimo Fails to Demonstrate that a DOSA Would Have Combined Bushnell with Fong

Masimo fails to demonstrate that a DOSA would have considered the proposed combination of Bushnell’s “convex housing component” with Fong’s design. Pet., 84. As described above, Bushnell’s rear face is square with a circular feature protruding from the center of the square. See EX1009, Figs. 1A, 2A. Bushnell includes four circular elements on the flat top surface of the protrusion. Fong also includes a protruding central portion, on which the square central element and configuration of four circles are positions. See EX1008, Fig. 2; EX2001, ¶91.



Left: EX1008, Fig. 2; Right: EX1009, Fig. 1A (excerpted).

Moreover, Masimo’s proposed combination of Bushnell’s “convex housing” with Fong results in a fundamental change contrary to Fong’s original design. Fong

includes a protruding central circle that is on a different plane compared to the pair of opposed shapes above and below the central protruding circle. EX2001, ¶¶92-93. Petitioner ignores that its proposal would eliminate this arrangement in favor of a different arrangement that would cause the opposed shapes to protrude outwardly, and the inner circle to instead be recessed. *See, e.g.,* Pet., 85 (showing Petitioner’s proposed combined design). Masimo fails to demonstrate a DOSA would have considered such a modification to the detriment of Yuen and Mendelson’s original designs. *See Termax*, IPR2022-00106, Paper 7 at 30 (rejecting proposal that would result in fundamental change and indicating “the notably consistent symmetrical nature of both designs would not suggest that a skilled designer would destroy that symmetry by using a rounded platform with a rectangular platform”) (citing *Apple*, 678 F.3d at 1331).

Accordingly, Masimo fails to demonstrate that a DOSA would have made the proposed combination of Fong with Bushnell.

b) Masimo Fails to Demonstrate the Proposed Series of Modifications Would Have Been Obvious to a DOSA

Masimo acknowledges multiple additional modifications to provide features beyond that depicted by Fong or Bushnell, here again tacitly acknowledging that modifying Fong to use Bushnell’s “convex housing component 104” fails to achieve

the claimed design. These additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶94.

The deficiencies discussed above are not remedied by Masimo's terse assertion that "any differences between the proposed combination (Fong and Bushnell) and the claimed design would have been changes that were taught by the prior art and a DOSA would have been motivated to make." As to Fong and Bushnell, the Petition fails to identify what those differences are, and certainly does not present any evidence that such changes "were taught by the prior art" or that a "DOSA would have been motivated to make" such changes. EX2001, ¶94. These bare assertions are woefully deficient in satisfying its burden.

V. CONCLUSION

For the foregoing reasons, Patent Owner requests that the Board deny institution on Grounds 1-3 of the Petition on the merits, and thus decline to institute *inter partes* review of the '936 patent.

Case No. IPR2023-00728
Attorney Docket No: 50095-0148IP1

Respectfully submitted,

Date: June 21, 2023

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Case No. IPR2023-00728
Attorney Docket No: 50095-0148IP1

CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response totals 8,371, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on June 21, 2023, a complete and entire copy of this Patent Owner's Preliminary Response and its supporting exhibits were provided via email, to the Petitioner by serving the email correspondence addresses of record as follows:

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2023-06-28 [008] Patent Owner's Preliminary
Response for '054 Patent (IPR2023-00635)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MASIMO CORPORATION
Petitioner

v.

APPLE INC.
Patent Owner

Case IPR2023-00635
Patent 10,987,054

**PATENT OWNER APPLE INC.'S
PRELIMINARY RESPONSE**

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Case IPR2023-00635
Attorney Docket No: 50095-0145IP1

LIST OF EXHIBITS

Exhibit No.	Description
APPLE-2001	Declaration of Dr. Thomas Kenney

I. INTRODUCTION

The Petition sets forth ten Grounds of unpatentability, each of which suffers from critical defects that render *Inter Partes* Review untenable.

To start, each of Masimo's ten grounds relies on a primary reference (Rothkopf) that was identified by the Examiner during prosecution and applied by the Examiner in a rejection. Yet, the Petition does not identify any "material error" by the Office during prosecution, and does not even acknowledge that Rothkopf has already been applied by the Office and found lacking. Rather, Masimo falsely asserts that "none of the references the Petition relies on were considered during examination." Pet., 90. This failure to identify any material errors made by the Office with respect to the Examiner's application of Rothkopf during prosecution is dispositive, especially when coupled with analysis on the merits that demonstrate meaningful deficiencies in the Petition's analysis of Rothkopf consistent with the PTO's original analysis.

In yet another dispositive failure of the Petition, Masimo asserts that the term "carrier member" is "require[d]...to be construed according to 35 U.S.C. §112(f)" yet Masimo refuses to identify a corresponding structure for the term "carrier member" and therefore fails to identify how any of the references disclose the corresponding structure or an equivalent thereof. Pet., 11. The Petition fails to

satisfy Masimo's burden to both "identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function" for the term "carrier member" and to specify where the corresponding structure "is found in the prior art patents or printed publications relied upon." 37 C.F.R. § 42.104(b)(3)-(4). The Board has regularly denied such petitions. *Infra*, Section VI.

The Petition is defective on the merits in other ways, confirming the PTO's original analysis of Rothkopf and the prior art of record. APPLE-2001, ¶¶37-38. The Petition relies on Rothkopf alone as anticipatory, but fails to identify any single embodiment that provides all of the identified elements, and does not remedy with any obviousness rationale. The Petition also fails to identify any viable rationale for modifying Rothkopf based on Jung (Grounds 2-2C) or Paulke (Ground 3-3C). Instead, the absence of the proposed structure in the prior art references highlights that the Petition's proposal is based only on impermissible hindsight. These and other faults with the Petition are laid out in detail below.

Ultimately, for at least these reasons, the "information presented in the petition" is plainly insufficient to satisfy Masimo's burden under § 314(a). Institution of this Petition should be denied.

II. THE *ADVANCED BIONICS* TEST FAVOR DISCRETIONARY DENIAL UNDER § 325(d)

Rothkopf, the primary reference relied upon in all Grounds of the Petition, was cited by the Examiner and *applied to the claims in a substantive rejection*. Discretionary denial of institution under 35 U.S.C. § 325(d) is therefore proper. 35 U.S.C. § 325(d) recites, in part:

In determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, the Director may take into account whether, and reject the petition or request because, *the same or substantially the same prior art or arguments previously were presented to the Office*.¹

The PTAB uses the following two-part framework to determine whether to exercise its discretion to deny institution of an *inter partes* review under § 325(d):

- (1) whether the same or substantially the same art previously was presented to the Office *or* whether the same or substantially the same arguments previously were presented to the Office; and

¹ All emphasis added unless otherwise noted.

(2) if ***either condition*** of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

Here, the Rothkopf reference (the sole reference for Ground 1 and primary reference for all other grounds) was previously considered and applied by the Office during prosecution of the '054 patent and therefore “the same or substantially same prior art or arguments previously were presented to the Office,” satisfying the first prong of the *Advanced Bionics* framework. 35 U.S.C. § 325(d). Indeed, a cursory review of the face of the '054 patent shows that Rothkopf was “cited by examiner” during prosecution:

2016/0058375 A1* 3/2016 Rothkopf G06F 3/015
600/301

EX1001, p. 2. The Examiner also ***applied*** Rothkopf to pending claims to reject the claims during prosecution. EX1002, 114-115. Yet Masimo has completely ignored that the primary reference relied upon in all Grounds of the Petition was previously assessed with respect to the issued claims by the Office during prosecution. Masimo has therefore failed to meet its burden to demonstrate that the Examiner committed

a material error, satisfying the second prong of *Advanced Bionics*. As demonstrated below, the *Advanced Bionics* framework favors discretionary denial under § 325(d).

A. Substantially the Same Prior Art Or Arguments Were Previously Presented to the Patent Office During Prosecution (*Advanced Bionics* Prong 1)

Rothkopf—the sole reference for Ground 1 and primary reference for all other grounds—was applied by the Examiner in rejecting the claims during prosecution of the '054 patent. EX1002, 114-115. At the time of filing the application that would become the '054 patent, the Applicant submitted a request for first action interview under the pilot program. EX1002, 169. The Examiner subsequently issued a First Action Interview Pilot Program Pre-Interview Communication rejecting all of the claims. *Id.*, 113. The Examiner's search identified "US-20160058375-A1" to "Rothkopf; Fletcher R." and labeled "Rothkopf" as reference "D2." *Id.*, 113-114. In rejecting the claims, the Examiner applied Rothkopf along with primary reference Kegasawa to dependent claim 22. EX1002, 114. Rothkopf therefore served as the basis for a rejection.

The fact that Rothkopf was applied to only a single dependent claim *does not* weigh negatively against this factor or discretionary denial in general. In a decision designated informative, the Board made clear that discretionary denial under § 325(d) is appropriate even when specific challenged claims were not previously rejected based on the reference relied upon in the Petition so long as the Examiner

considered the reference prior to allowing the claims. *Unified Patents Inc. v. Berman*, IPR2016-01571, Paper 10 at 11-12 (PTAB Dec. 14, 2016) (Informative). Specifically, the Board held that in situations in which a reference is applied to some, but not all, of the issued claims during prosecution, the reference is viewed by the Board as having been “considered previously by the Office” even with respect to “issued claims [that] were never rejected over [[the cited reference]].” *Id.*; *see also Monolithic Power Systems, Inc. v. Volterra Semiconductor LLC*, IPR2020-01348, Paper 19 at 11-12 (PTAB Mar. 4, 2021) (finding that evidence (beyond an IDS) that the Examiner reviewed a reference relied upon in the Petition, even if the Examiner never applied the reference in rejecting any of the claims, “weighs heavily for application of our discretion to deny institution.”). The situation here is no different from that in *Unified Patents*—Rothkopf was identified by the Examiner during a search and applied in a rejection to the claims before the Examiner ultimately allowed the claims. EX1002, 114-115, 42-48. Rothkopf was evaluated by the Examiner during prosecution and served as a basis for rejection and therefore was considered previously by the Office. There is no reason to “readjudicate substantially the same prior art and arguments as those presented during prosecution and considered by the Examiner.” *Unified Patents*, IPR2016-01571, Paper 10 at 12.

Because Rothkopf was applied during prosecution, Ground 1, which relies on Roghkopf alone, relies on the exact same art already considered during prosecution.

The only other Grounds addressing the independent claims, Grounds 2 and 3, rely on Rothkopf as the primary reference while adding Jung or Paulke, respectively. However, as demonstrated in Sections V.B-C, *infra*, both the Rothkopf-Jung and Rothkopf-Paulke combinations fail to provide at least one of the elements identified by the Examiner as missing from the known prior art (which included Rothkopf).

Specifically, in allowing the claims of the '054 patent, the Examiner concluded that the known prior art “*fails to disclose*, teach, or suggest the carrier assembly comprising *a carrier member and (first/second or rear) electrode(s)* as claimed.” EX1002, 47. Specifically, none of the known references provided a “motivation to modify the carrier assembly (53 in FIG. 16) of Kegasawa” to “provide electrodes directly onto the carrier assembly.” Indeed, in the Examiner’s summary of the initial interview, the Examiner stated that “Applicant pointed out that *the novelty of the invention is forming the electrode directly on a carrier substrate formed from glass/sapphire dome.*” EX1002, 105. The claims were subsequently allowed after such features were incorporated into the independent claims. EX1002, 89-94, 42-48. Masimo agrees that the claims were allowed after the Applicant added “limitations of a ‘carrier assembly’ comprising a ‘carrier member’ positioning [*sic*] first and second electrodes.” Pet., 7-8.

Yet Masimo relies on Rothkopf alone as allegedly disclosing elements in each of the independent claims directed to just such a feature. Therefore, not only does

the Petition rely on the same art considered and applied during prosecution, but also presents the same arguments. As mentioned above, Ground 1 relies on Rothkopf alone and therefore presents the exact same prior art previously considered during prosecution with respect to all claim elements. In Ground 2, Masimo relies exclusively on Rothkopf as allegedly disclosing Element 1f “*a first electrode positioned on the carrier member...*” Pet., 40-42. Masimo goes on to argue that, with respect to Element 1g, Rothkopf alone allegedly “discloses a second electrode (‘pair of electrodes’) positioned on the carrier member,” relying on Jung only for “the exact configuration of the electrodes.” Pet., 41. As discussed above, these claim elements are the exact features of a “carrier assembly comprising a carrier member and (first/second or rear) electrode(s) as claimed” that the Examiner found to be missing from the art of record, including Rothkopf. EX1002, 47. Therefore, with respect to these elements identified by the Examiner as missing from Rothkopf and the other art of record, the Petition presents the same prior art for Ground 2.

Continuing with Ground 2, with respect to Element 9g, which recites in part “a rear electrode positioned on the carrier member,” Masimo once again insists that “Rothkopf [alone] teaches this limitation as explained above with regard to limitation 9g of Ground 1.” Pet., 55. Masimo goes on to argue that “Jung *also* discloses a biometric sensor carrier assembly with a biometric sensor carrier member” therefore indicating that Masimo believes that Jung is duplicative of the

teachings of Rothkopf for this element and therefore Jung is “substantially the same” prior art previously considered by the Office. Pet., 56. Indeed, Masimo only relies on Jung as allegedly disclosing a specific arrangement for the electrodes, not for the concept of the electrodes positioned on the carrier as claimed. Pet., 56-58. Masimo provides a nearly identical analysis with respect to Element 15e, which recites in part “a rear electrode positioned on the carrier member.” Pet., 63-65. As with Claim 9, Masimo once again asserts that “Rothkopf [alone] teaches this limitation as explained above with regard to Claim 15e of Ground 1” while relying on Jung for the specific arrangement of electrodes. *Id.*

Ground 3 shows a similar pattern. With respect to Element 1F, (“***a first electrode positioned on the carrier member...***”) the Petition merely cites back to the Ground 2 analysis, which, as discussed above, relies on Rothkopf alone. Pet., 74. With respect to Element 1g, as in Ground 2, Masimo alleges that Rothkopf alone “discloses a second electrode (‘pair of electrodes’) positioned on the carrier member,” relying on Paulke only for “the exact configuration of the electrodes.” Pet., 75-78. As discussed above, these claim elements are the exact features of a “carrier assembly comprising a carrier member and (first/second or rear) electrode(s) as claimed” that the Examiner found to be missing from the art of record, including Rothkopf. EX1002, 47.

Continuing with Ground 3, for both Element 9g (“a rear electrode positioned on the carrier member...”) and 15e (“a rear electrode positioned on the carrier member...”), Masimo once again asserts that “Rothkopf [alone] teaches this limitation as explained above with regard to [[Element 9g/15e]] of Ground 1” while relying on Paulke only for the specific arrangement of electrodes. Pet., 79-81, 84-86.

With respect to the dependent claims addressed in Grounds 1A, 2A-2C, and 3A-3C, an informative decision by the Board specifies that citation by the Petition to additional secondary references “in certain grounds, for the additional subject matter of certain dependent claims, is insufficient to persuade us that exercising our discretion under 35 U.S.C. § 325(d) is inappropriate” when the reference(s) relied upon with respect to the independent claims were previously presented to the Office. *Kayak Software Corp. v. Int’l Bus. Mach. Corp.*, CBM2016-00075, Paper 16 at 10 (PTAB Dec. 15, 2016) (Informative). The addition of Pei, Honda, Francis, and Lapetina with respect to certain dependent claims does not weigh against discretionary denial under § 325(d).

Because the Petition relies exclusively on the same or substantially the same prior art considered by the Examiner during prosecution for the features thought to be missing from the prior art of a “carrier assembly comprising a carrier member

and (first/second or rear) electrode(s) as claimed” (EX1002, 47), the first prong of the *Advanced Bionic* framework is satisfied.

B. Petitioner Has Not Met its Burden to Demonstrate Any Error Material to Patentability (*Advanced Bionics* Prong 2)

Because the first prong of the *Advanced Bionic* framework is satisfied, Petitioner bears the burden to demonstrate the second prong of the framework, namely “that the Office erred in a manner material to the patentability of challenged claims.” *Advanced Bionics*, IPR2019-01469, Paper No. 6 at 8, 10-11 (burden is on the petitioner to identify “a material error by the Office” during prosecution to avoid discretionary denial under U.S.C. § 325(d)), 20-21. Not only has Masimo failed to satisfy this burden of demonstrating such a “material error,” the Petition never even alleged it. In fact, Masimo completely ignores the Examiner’s application of Rothkopf in a claim rejection during prosecution, falsely asserting that “none of the references the Petition relies on were considered during examination.” Pet., 90.

Additionally, as demonstrated in Sections V.A-C, *infra*, the references cited in the Petition fail to provide the very feature believed to be missing from the prior art of a “carrier assembly comprising a carrier member and (first/second or rear) electrode(s) as claimed.” EX1002, 47. Masimo fails to present any new arguments or evidence to demonstrate how or why the Examiner erred in applying Rothkopf

to the claims during prosecution or how the Petition corrects for such errors.

Masimo has also made no showing to demonstrate or suggest that the examiner misapprehended or overlooked the teachings in the references of record.

Masimo's submission of expert testimony with the Petition is insufficient to overcome the fact that the relied upon reference was previously identified and applied by the Examiner because the additional testimony does not identify error by the Examiner, contains only "conclusory statement[s]" and is "unsupported by sufficient evidence." *PUMA North America, Inc. v. NIKE, Inc.*, IPR2019-01042, Paper 10 at 20-21 (PTAB Oct. 31, 2019) (Informative). That is especially true where, as is the case here, the supporting declaration "merely repeats, *verbatim*" the language of the Petition itself. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15-17 (August 24, 2022) (Precedential) (emphasis original); *Compare, e.g., Pet.*, 40-41 *with* EX1003, ¶¶83-84. Such declaration testimony that merely repeats the Petition "is entitled to little weight." *See* 37 C.F.R. § 42.65(a); *Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000); *Corning Inc. v. DSM IP Assets B.V.*, IPR2013-00048, Paper 94 at 33 (PTAB May 9, 2014) (citing to *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985)) ("bare opinion is entitled to little weight in the absence of objective, evidentiary support").

To be clear, Masimo relies on the previously applied Rothkopf reference as allegedly disclosing the claim features identified by the Examiner as having been

missing from the known art. *Supra*, Section II.A. Masimo requests that the Board substitute its judgment for that of the Examiner, without any identified error or explanation why the Examiner's analysis was incorrect. "If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability." *Advanced Bionics*, IPR2019-01469, Paper No. 6 at 9. Here, as discussed in Section V, *infra*, not only was the Examiner's determination "reasonable," it was also correct. The present IPR is simply a case of the Petitioner ignoring the Examiner's assessment of the art and requesting that the Board come to a different conclusion based on the same facts. The Board should decline this invitation.

Due to the fact that Masimo "has not articulated how or why the Examiner erred" in allowing the claims of the '054 patent after evaluation and application of Rothkopf during prosecution, this prong heavily favors discretionary denial of institution. *PUMA*, IPR2019-01042, Paper 10 at 15-16. For at least the above reasons, denial under § 325(d) would be proper.

III. Level of Ordinary Skill

For purposes of this IPR, Petitioner submits that a person of ordinary skill in the art at the time of the alleged invention (a "POSITA") would have had at least a bachelor's degree in electrical engineering, computer engineering, mechanical engineering, biomedical engineering, physics, or a related field, and would have

had at least two years of relevant work experience with capture and processing of data or information, including but not limited to physiological information, or equivalents thereof. APPLE-2001, ¶26. Less work experience may be compensated by a higher level of education and vice versa. *Id.*

IV. Masimo’s Petition is defective for failure to identify corresponding structure for terms it asserts should be construed as means-plus-function terms according to 35 U.S.C. § 112(f)

Masimo has failed to provide a proper construction as required by 37 C.F.R. § 42.104(b)(3) for terms it has identified as means-plus-function terms and therefore, as outlined below, institution should be denied.

A. “carrier member”

Masimo asserts that the term “carrier member,” which appears in each of the independent claims, is “nonstructural” and should therefore be construed as a means-plus-function term under 35 U.S.C. § 112(f). Pet. 11. Indeed, Masimo asserts that “courts *require* such terms to be construed according to 35 U.S.C. § 112(f).” *Id.* In this proceeding, it is the Petitioner’s burden to provide the proper construction. When, as here, a Petitioner argues under the *Phillips* standard that the claim elements must be construed as means-plus-function limitations, the Petition “*must* identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.” 37 C.F.R. § 42.104(b)(3); *see also Verizon Services Corp. et al. v. AIP Acquisition LLC*,

IPR2015-01106, Paper No. 10 at 18 (PTAB Oct. 15, 2015) (“Per 37 C.F.R. § 42.104(b)(3), a petition **must** identify the specific portions of the specification that describe the structure, material, or acts corresponding to each function of a means-plus-function claim limitation.”). This requirement is not optional. “**By rule**, Petitioner is **required** to identify in its Petition the corresponding structure in the specification for means-plus-function terms.” *Samsung Elecs. Am., Inc. v. Uniloc 2017 LLC*, IPR2020-00046, Paper 6 at 6 (PTAB Apr. 1, 2020) (denying institution).

Despite this clear requirement, the Petition failed to identify both the function performed by the claimed “carrier member” and any corresponding structure for the term “carrier member” in the specification. Pet., 11. Instead, Masimo insists that “the ’054 Specification **does not**...provide any structure corresponding to a ‘carrier member.’” *Id.* Denial of institution is proper when the Petition lacks “any explanation or sufficient identification from Petitioner of the structure of the means-plus-function terms.” *Callminer, Inc. v. Mattersight Corp.*, IPR2020-00272, Paper 8 at 13-14 (PTAB June 18, 2020). Masimo’s failure to “identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function” is dispositive. 37 C.F.R. § 42.104(b)(3). Institution should be denied.

Masimo was obligated to “have either provided reasons why these limitations are not governed by 35 U.S.C. § 112[[f]], or Petitioner should have provided an explicit claim construction as required by [PTAB] rules.” *OrthoPediatrics Corp. v. K2M, Inc.*, IPR2018-01548, Paper 9 at 10 (PTAB March 1, 2019). Yet Masimo insisted that § 112(f) should apply while failing to provide the required construction. Here, Masimo “in effect, seeks an advisory opinion from the Board as to whether the challenged claims are indefinite under 35 U.S.C. § 112(b).” *Samsung*, IPR2020-00046, Paper 6 at 7-8. However, it is not the Board’s role “to issue advisory opinions on how we might have ruled if given additional statutory authority.” *Id.* Where, as here, the Petitioner asserts that 112(f) applies to a claim term, yet applies the cited references to the term using a plain and ordinary meaning construction, “the proper course for the Board to follow...is to decline to institute the IPR.” *Id.*, 10 (citing *Samsung Elecs. Am., Inc. v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1353 (Fed. Cir. 2020)).

Masimo’s failure to identify any corresponding structure for the term “carrier member” also means that Masimo has failed to identify how the cited references disclose the corresponding structure for this term. “***Under governing precedent***, to show that a means-plus-function limitation was present in the prior art, Petitioner must demonstrate that the corresponding structure—or an equivalent—was present in the prior art.” *Microsoft Corp. v. Uniloc 2017 LLC*,

IPR2020-00103, Paper No. 8 at 9-10 (PTAB May 11, 2020) (denying institution) (internal quotations omitted). Where, as here, the “Petitioner fails to do so,” denial of institution is proper. *Id.*, 9-11.

As the Board has repeatedly held, when the “Petitioner has not identified structure, material, and acts in the Specification” corresponding to the means-plus-function term “Petitioner has not accounted for how such unidentified structure, material, and acts would have been met by the prior art.” *Toyota Motor Corp. v. Blitzsafe Tex., LLC*, IPR2016-00422, Paper 12 at 28 (PTAB July 6, 2016). In such scenarios, it is not the Board’s place to “make arguments for Petitioner” by identifying a corresponding structure and identifying where such a corresponding structure or equivalent can be found in the cited art. *Facebook, Inc. v. Sound View Innovations, LLC*, IPR2017-00985, Paper 17 at 12-14 (PTAB Sept. 5, 2017).

Indeed, when, as is the case here, an identification of the corresponding structure “is not present in the Petition[.]...[i]t follows that Petitioner has not explained how any prior art teaching accounts for the corresponding structure.” *Verizon Services Corp.*, IPR2015-01106, Paper No. 10 at 18. Denial of institution is therefore proper.² Masimo’s proposed alternative construction of “carrier

² *Verizon Services Corp.* was decided prior to the Supreme Court decision in *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) and therefore institution was

member” to mean “a component of a carrier assembly” (Pet., 12) does not correct for the Petition’s failings on this point. Masimo has taken a firm position that § 112(f) construction applies to the term “carrier member” yet has refused to identify the function or corresponding structure for this term. Pet., 11-12. Masimo’s failure to meet the clear burden under 37 C.F.R. § 42.104(b)(3) is dispositive.

B. “housing member”

Masimo asserts in the Petition that “‘member’ style claim terms are nonstructural, and accordingly, courts require such terms to be construed according to 35 U.S.C. §112(f).” Pet., 11. Yet Masimo offers no construction, and therefore identifies no corresponding structure, for the term “housing member,” which appears in each of independent claims. The Petition fails due to Masimo’s failure to identify corresponding structure in the ’054 Specification for the same reasons discussed with respect to the term “carrier member” in Section VI.A, *supra*. That is, Masimo was obligated to “have either provided reasons why these limitations are not governed by 35 U.S.C. § 112 [(f)], or Petitioner should have provided an explicit claim construction as required by [PTAB] rules.” *OrthoPediatrics*, IPR2018-01548, Paper 9 at 10. Because Masimo has not done so with respect to

denied with respect to only the dependent claims to which pre-AIA 112/6 applied. Here, Masimo has asserted that 112(f) (pre-AIA 112/6) applies to an element of each independent claim and therefore denial of the entire petition is proper.

the term “housing member,” institution should be denied. *Microsoft*, IPR2020-00103, Paper No. 8 at 9-11.

V. The Petition Fails To Provide “a [first/second/rear] electrode positioned on the carrier member” (All Grounds)

Each of the grounds in the Petition that address the independent claims (Grounds 1, 2, and 3) fails to demonstrate that the cited references disclose Elements 1f, 1g, 9g, and 15e. APPLE-2001, ¶39. This defect taints all grounds, and provides an independent reason institution should be denied.

A. Ground 1 Fails To Provide Elements 9g and 15e

Ground 1 is an anticipation ground that relies on Rothkopf alone. Pet., 19. But the Petition fails to demonstrate that Rothkopf describes Elements 9g and 15e.

For example, in addressing Element 9e, Masimo identifies Rothkopf’s “biosensor module 710” as purportedly disclosing the claimed carrier assembly and the “rear cover 608” as purportedly disclosing the claimed carrier member. *Id.*, 21-22.

indicate that the electrodes are positioned on “rear cover 608,” rather than another portion of the biosensor module 710. *Id.* Simply put, this paragraph of Rothkopf does not describe the electrodes as positioned *on* the rear cover 608. *Id.*

This gap is not remedied by citation to paragraph [0201] of Rothkopf—located seven pages later—that states “biosensors are disposed relative to or attached to a rear cover 608.” Pet., 23 (citing EX1005, [0201]); APPLE-2001, ¶44. The Petition lacks any explanation from Rothkopf of *which* biosensors are “attached to” the rear cover. Other portions of Rothkopf describe that the biosensors located on the biosensor module are *light sources* and *photodetectors*— “[t]he biosensor module may include an array of light sources configured to emit light into a body of the user, and a photodetector configured to receive light produced by a light source of the array of light sources that is reflected from the body and produce a sensor signal.” EX1005, [0021], [0013]; APPLE-2001, ¶44. A POSITA therefore would have recognized from Rothkopf’s disclosures as a whole that Rothkopf’s broad discussion of “biosensors” being “disposed relative to or attached to” the rear cover 608 is in fact referring to optical sensors positioned relative to or attached to the rear cover and not referring to electrodes positioned on the outer surface of the rear cover 608. APPLE-2001, ¶44.

Notably, the Petition ignores that each and every specific example described by Rothkopf exclusively indicates electrodes positioned at a different location

away from the rear cover, never hinting at implementation of electrodes on the transparent rear cover. APPLE-2001, ¶¶44-46. For example, Rothkopf goes on to disclose, when describing the entire product more generally, that “[t]he biosensors may include optical and/or electronic biometric sensors that may be used to compute one or more health metrics” and that “[a]n example consumer product having multiple biosensors is described below with respect to FIG. 16.” EX1005, [0062]. In the device shown in FIG. 16, **only** the light emitting and detecting biosensors are positioned on the biosensor module. The electrodes are expressly described and illustrated as separate from the rear cover 608. APPLE-2001, ¶¶45-46. The “light sources 1611-1613 and a detector 1614” are positioned on the rear cover 608 while “a first electrode 1601 and second electrode 1602 are disposed on the rear face of the device 100” off of the rear cover 608:

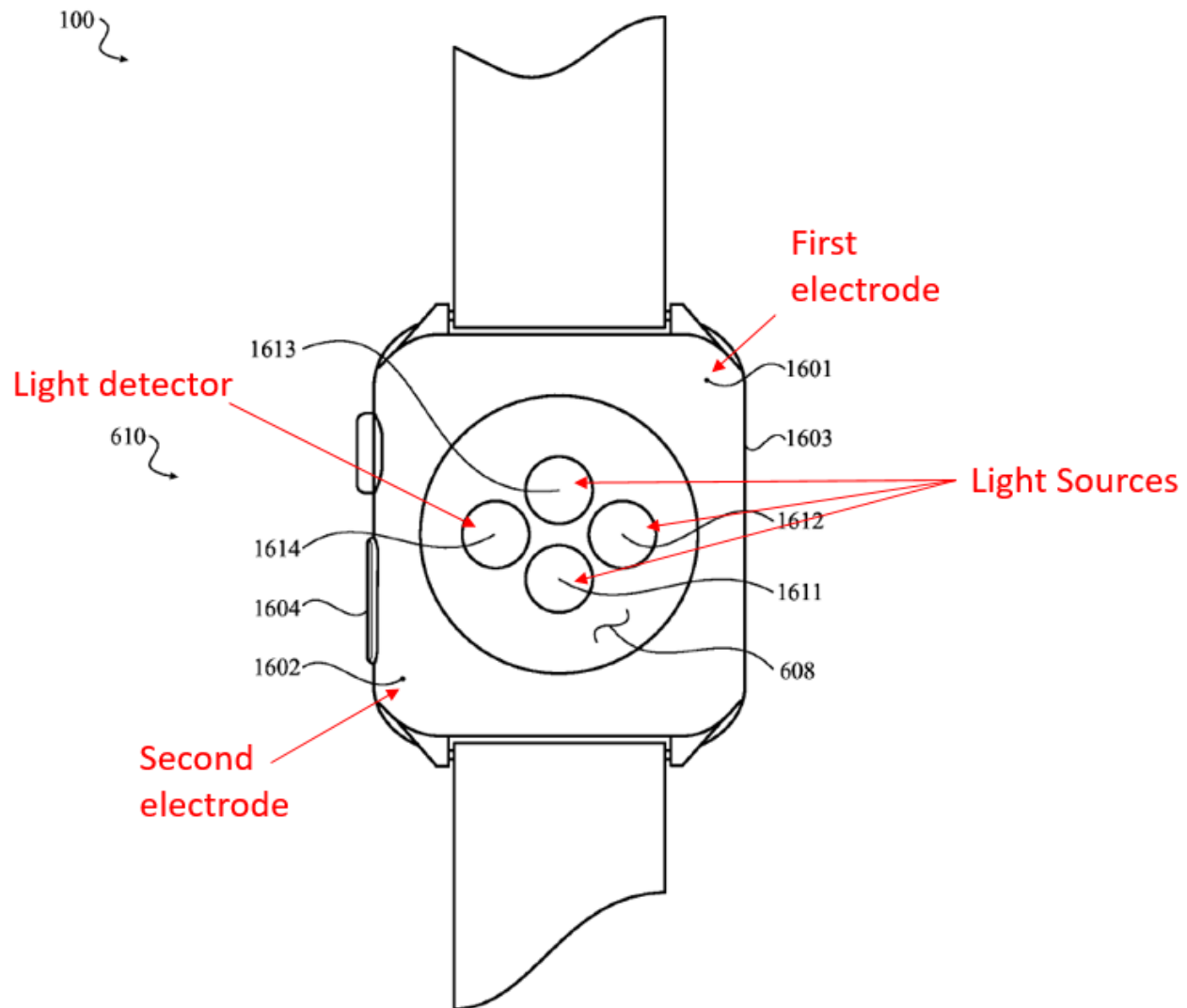


FIG. 16

EX1005, FIG. 16 (annotated), [0190], [0196]; APPLE-2001, ¶46.

Critically, the Petition fails to cite anything in Rothkopf that describes electrodes attached to the “rear cover 608.” *See*, Pet. Ground 1. Instead, Rothkopf’s description that “biosensors are disposed relative to or attached to the rear cover 608” plainly refers to light emitting and photodetector biosensors, not

electrodes. EX1005, [0201]; APPLE-2001, ¶46. This becomes especially clear considering Rothkopf’s description that the “rear cover 608” is “optically transparent” and functions to “provide operational access to one or more optical components of the biosensor module.” EX1005, [0012]; [0139]; [0149]; [0201]; APPLE-2001, ¶44.

The Petition’s unsupported leap is not bridged by Rothkopf’s description that biometric sensors of the device as a whole can include both “one or more electrodes” and “a light source and a photodetector to form a photoplethysmography (PPG) sensor.” EX1005, [0084]; APPLE-2001, ¶47. As noted above, the specific arrangements of the different types of biosensors described by Rothkopf *exclusively* show the electrodes positioned *separate* from the rear cover 608. *Id.*, FIG. 16, [0196]. This conforms with the overall disclosure of Rothkopf that “[t]he *device* may also include at least one pair of electrodes disposed *on an exterior surface* of the wearable electronic device.” EX1005, [0024]. That is exactly what is shown in FIG. 16 (reproduced above)—electrodes located on an exterior surface of the watch housing that is distinct from the rear cover. APPLE-2001, ¶47. The Petition simply fails to identify any disclosure of the electrodes being positioned on the rear cover 608, and there is none. APPLE-2001, ¶¶40-47.

To be clear, the Petition relies exclusively on anticipation for this element, never even alleging an obviousness theory, and certainly not any rationale for why a POSITA would have modified the device of Rothkopf to include the electrodes on the rear cover 608. And any such analysis would be improper in an anticipation ground.

Ground 1's analysis of Element 15e ("a rear electrode positioned on the carrier member...") largely mirrors the analysis of Element 9g, citing to the same portions of Rothkopf, none of which describe electrodes positioned on the "rear cover 608." *Compare* Pet., 23 *with* Pet., 31-32; APPLE-2001, ¶¶40-41, 47.

Ground 1 therefore fails to demonstrate that Element 15e was taught in the prior art for the same reasons as discussed above with respect to Element 9g. Ground 1A does not correct for this deficiency in Ground 1, which applies only to dependent claim 10 and does not allege an alternative obviousness argument for these claim elements. Ground 1A is therefore fatally flawed for the same reasons as Ground 1.

B. Ground 2 Fails To Provide Elements 1f, 1g, 9g, and 15e

Ground 2 is an obviousness ground based on Rothkopf in view of Jung. Pet. 37. However, in its analysis of Element 1f ("a first electrode positioned on the carrier member..."), Masimo relies on Rothkopf alone. Pet., 40. Ground 2's analysis of Element 1f is nearly identical to the Ground 1 analysis of Element 9g, citing to all of the same portions of Rothkopf. *Compare* Pet., 23 *with* Pet., 40-41;

APPLE-2001, ¶48. As discussed in Section V.A, *supra*, there is no disclosure in Rothkopf of positioning the electrodes on the rear cover 608. Furthermore, in addressing Element 1f, the Petition does not allege that it would have been obvious to modify Rothkopf to position the electrodes on the rear cover 608 or provide a rationale for doing so. Pet., 40-41.

Turning to Element 1g, Masimo incorrectly asserts that “Rothkopf discloses a second electrode (‘pair of electrodes’) positioned on the carrier member (rear cover 608)” while citing to the analysis of Element 1f. Pet., 41. However, as discussed above, there is no disclosure in Rothkopf of positioning an electrode, let alone two, on the rear cover 608 itself. APPLE-2001, ¶49. Indeed, all recitations of a “pair of electrodes” in Rothkopf either refer to “[t]he device” in general or “the housing” rather than the rear cover of the device. EX1005, [0023]-[0024]. For example, Rothkopf describes that “[*t*]he device may also include at least one *pair of electrodes* disposed *on an exterior surface* of the wearable electronic device.” *Id.*, [0024]. In another example, Rothkopf describes that “*the device* also includes at least one *pair of electrodes* disposed on an exterior surface of *the housing*” rather than the rear cover. *Id.*, [0023]. There is simply no disclosure of the electrodes being positioned on the rear cover 608. APPLE-2001, ¶¶40-47.

While the Petition does cite Jung with respect to Element 1g, it does so only for “the exact configuration of the electrodes” while expressly relying on “the

teaching of Rothkopf to locate the electrodes on the biosensor module.” Pet., 41-42; APPLE-2001, ¶50. The addition of Jung therefore does not correct the deficiency in Rothkopf of its lack of disclosure of actually positioning the electrodes on the rear cover 608. APPLE-2001, ¶¶50-52. Indeed, as discussed in greater detail in Section VI.A, *infra*, there is no disclosure whatsoever in Jung of positioning electrodes on a carrier member, and therefore Jung suffers from the same deficiency as Rothkopf. APPLE-2001, ¶¶63-67.

Ground 2’s analysis of Elements 9g and 15e simply cite back to the analysis of Ground 1 with respect to the teachings of Rothkopf. Pet., 55, 63. As discussed above, this analysis is faulty. The Petition further cites to Jung as “provid[ing] further details on the suggested embodiments of Rothkopf.” Pet., 56, 64. However, as discussed with respect to Element 1g, above, the Petition applies Jung’s disclosure to Rothkopf only for “the exact configuration of the electrodes” while expressly relying on “the teaching of Rothkopf to locate the electrodes on the biosensor module.” Pet., 41-42; APPLE-2001, ¶¶50-52. Ground 2’s analysis of Elements 9g and 15e therefore fail for the reasons discussed with respect to Elements 1f and 1g, above. Grounds 2A-2C do not correct for this deficiency in Ground 2 as they apply to only certain dependent claims and do not allege any alternative obviousness arguments for these claim elements. Grounds 2A-2C are therefore fatally flawed for the same reasons as Ground 2.

C. Ground 3 Fails To Provide Elements 1f, 1g, 9g, and 15e

Ground 3 is an obviousness ground based on Rothkopf in view of Paulke.

Pet. 74. However, in its analysis of Element 1f (“a first electrode positioned on the carrier member...”), Masimo relies on Rothkopf alone, citing back to the analysis of Ground 2. *Id.* As discussed in Section V.B, *infra*, the Petition fails to demonstrate that Rothkopf provides Element 1f. APPLE-2001, ¶53.

Turning to Element 1g, Masimo’s arguments here are highly similar to those in Ground 2. Once again, Masimo incorrectly asserts that “Rothkopf discloses a second electrode (‘pair of electrodes’) positioned on the carrier member (rear cover 608)” while citing to the Ground 2 analysis of Element 1f. Pet., 75. As previously discussed, there is no disclosure in Rothkopf of positioning an electrode, let alone two, on the rear cover 608 itself. APPLE-2001, ¶¶54, 40-47. Indeed, all recitations of a “pair of electrodes” in Rothkopf describe the electrodes as being positioned on “[t]he device” in general or “the housing” rather than the rear cover of the device. EX1005, [0023]-[0024].

While the Petition does cite to Paulke with respect to Element 1g, it does so only for “the exact configuration of the electrodes” while expressly relying on “the teaching of Rothkopf to locate the electrodes on the biosensor module.” Pet., 75-76; APPLE-2001, ¶55. The addition of Paulke therefore does not correct the

deficiency in Rothkopf of its lack of disclosure of actually positioning the electrodes on the rear cover 608. APPLE-2001, ¶55.

Ground 3’s analysis of Elements 9g and 15e simply cite back to the analysis of Grounds 1 and 2 with respect to the teachings of Rothkopf. Pet., 79, 84. As discussed above, this analysis is faulty. The Petition further cites to Paulke with respect to Elements 9g and 15e. However, as discussed with respect to Element 1g, above, the Petition applies Paulke’s disclosure to Rothkopf only for “the exact configuration of the electrodes” while expressly relying on “the teaching of Rothkopf to locate the electrodes on the biosensor module.” Pet., 75-76. Ground 3’s analysis of Elements 9g and 15e therefore fail for the reasons discussed with respect to Elements 1f and 1g, above. APPLE-2001, ¶¶53-55. Grounds 3A-3C do not correct for this deficiency in Ground 3 as they apply to only certain dependent claims and do not allege any alternative obviousness arguments for these claim elements. Grounds 3A-3C are therefore fatally flawed for the same reasons as Ground 23

VI. Grounds 2-2C: The Petition Fails to Demonstrate a POSITA Would Have Been Motivated to Combine Rothkopf and Jung to Achieve the Claimed Invention

The Petition’s Ground 2 obviousness suffers from multiple fatal defects. First, Masimo’s proposed modification of Rothkopf based on Jung is premised on the false assertion that Jung describes first and second electrodes “positioned on

and wrapped around the edges of [a] carrier (231).” Pet., 42. From this incorrect assertion of Jung’s structure, the Petition proposes modification of Rothkopf to have electrodes that “wrap around the edges” of Rothkopf’s rear cover and that extend from the exterior to “interior” surfaces of the “rear cover.” Pet., 44-45. But Petitioner’s theory ignores Jung’s actual structure that in fact lacks these features. APPLE-2001, ¶¶63-67. The Ground 2 combination is thus based on a structure that is simply not described by Jung and that is found only in the ’054 patent itself, confirming the hindsight nature of the Petition’s analysis.

Second, the Petition asserts a motivation to “improve contact with the user’s skin by covering as much of the carrier member as possible” (pet., 45), ignoring Rothkopf’s original solution and contact with the user’s skin that it already achieved. Third, the Petition does not acknowledge the detrimental effects resulting from the proposed modification, each of which would have been avoided by a POSITA.

A. The Proposed Rothkopf-Jung Combination is Contrary to Jung’s Structure.

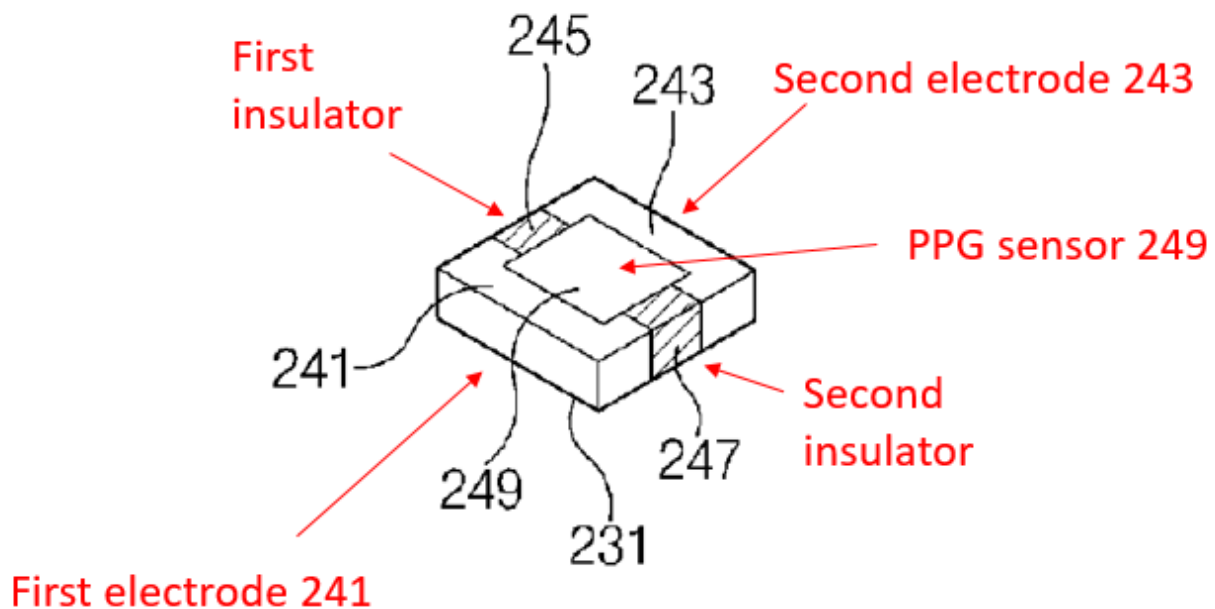
Masimo’s assertions regarding the teachings of Jung and the alleged combination of Rothkopf with Jung are contrary to the straightforward disclosures of the references themselves. APPLE-2001, ¶63. Rather than finding foundation in the actual teachings of Jung, the lack of support for Masimo’s assertions in Jung

confirm Masimo's obviousness theory is based only on improper hindsight. *In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) (a showing of obviousness must rest on a factual basis, and it may not resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983) ("to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher").

Masimo asserts that Jung discloses a carrier member provided by a "biometric sensor (231)," and that the "[b]iometric sensor (231) includes: first and second electrodes (241, 243, respectively); and a light emitter and receiver (249)." Pet., 42. Massimo further asserts that "the first and second electrodes are ***positioned on and wrapped around the edges*** of the carrier." Pet., 42 (referring to biometric sensor 231 as a "carrier member"); *see also*, Pet., 15 ("first and second electrodes (241, 243) may be disposed on and around the edges of the biometric sensor 231."); 54 (alleging Jung discloses electrode disposed on an "interior surface" of carrier member); 60 ("interior wrapped portion of the electrode").

In drastic contrast to the Petition's characterization, however, Jung includes no disclosure of such a "carrier member" that electrodes are "positioned on" or "wrapped around." Pet., 42, 56, 63. Rather, Jung discloses that the structure of the "biometric sensor 231" is ***formed from the various sensors (and intervening***

insulators) themselves. APPLE-2001, ¶¶63-64, 66. Specifically, as described by Jung and shown in FIG. 2 (below), the biometric sensor 231 is an assembly made up of first and second electrodes 241 and 243 that are separated by insulators 245 and 247 with a PPG sensor positioned in the center of the assembly. EX1006, [0046]; APPLE-2001, ¶64. The first and second electrodes 241 and 243 extend from the top to the bottom of the biometric sensor 231 and are not *positioned on* a carrier member (as required by the claims), and certainly not “*wrapped around*” edges from exterior/front to interior:



EX1006, FIG. 2 (partial, annotated), [0046]; APPLE-2001, ¶¶64, 66.

Moreover, Jung confirms that the biometric sensor 231 (the outer structure of which is formed from the first and second electrodes 241 and 243 and the insulators 245 and 247) is in fact mounted on an *internal* “first printed circuit

board 230” of Jung’s smartphone. EX1006, [0045]; APPLE-2001, ¶65. Indeed, the Petition itself acknowledges this aspect of Jung’s structure—“the electrodes connect directly to a circuit board (230) and processor inside the housing.” *See, e.g., Pet, 54.*

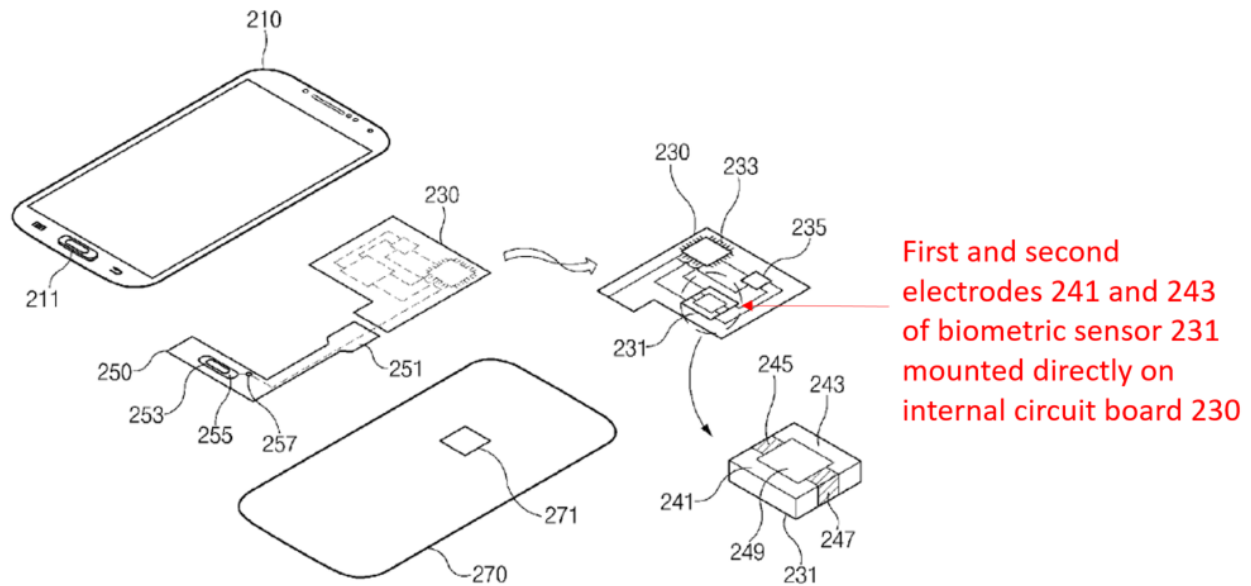


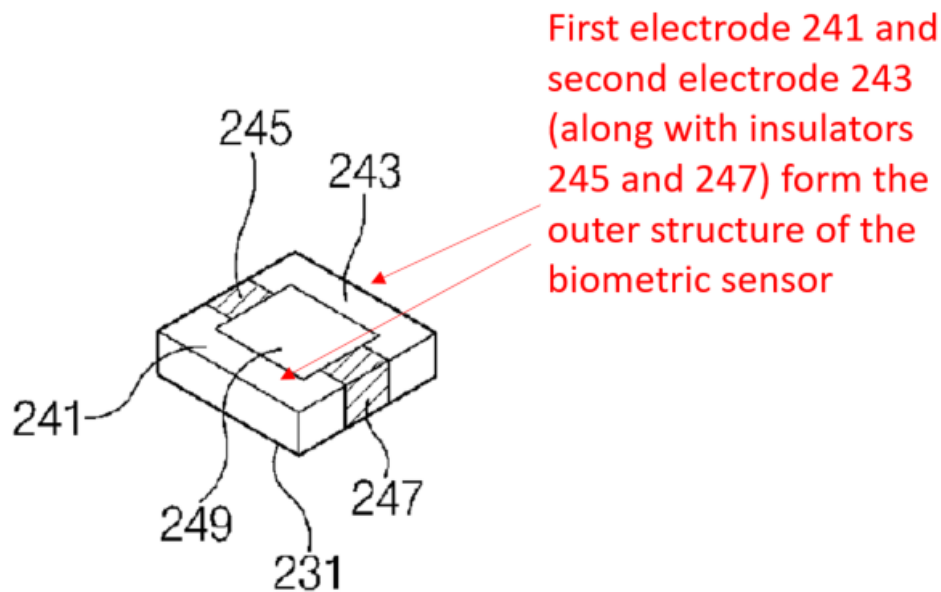
FIG. 2

EX1006, FIG. 2 (annotated). There is simply no disclosure in Jung of the biometric sensor having a carrier member that the electrodes 241 and 243 are “positioned on” or “wrapped around” from exterior to interior. APPLE-2001, ¶¶66-67.

Turning now to Masimo’s alleged combination of Rothkopf with Jung, Masimo asserts that a POSITA “would look to other mobile electronic device

references that teach the use of electrodes *on* a biosensor carrier assembly,” and “would position the electrodes and *wrap* the electrodes *around* the edges of Rothkopf’s carrier member as taught by Jung.” *Id.* 42; 45 (“[a] POSITA seeking to implement the teachings of Rothkopf would understand based on Jung’s disclosure, that the electrodes can wrap around the edges of a carrier member that includes an optical PPG sensor in a central location of the carrier member.”); 54 (“interior surface” of carrier member); 56; 60 (“interior wrapped portion of the electrode”); 63. But as discussed above, Jung simply never describes first and second electrodes 241 and 243 are “*positioned on and wrapped around*” a carrier member. APPLE-2001, ¶¶66-67, 64.

Jung is clear that the first and second electrodes 241 and 243 (along with PPG sensor 249 and insulators 245 and 247) *form* the structure of Jung’s biometric sensor 231—not that electrodes 241 and 243 are positioned “*on a biosensor carrier assembly*” as asserted by the Petition. EX1006, [0046]; APPLE-2001, ¶¶64, 66.



EX1006, FIG. 2 (partial, annotated). Moreover, as noted above, the first and second electrodes 241 and 243 are mounted directly onto Jung’s internal circuit board 230. *Id.*, [0045]; FIG. 2; Pet., 44 (“connects directly to a circuit board”); 54 (“electrodes connect directly to a circuit board (230)”); 56 (“biosensor carrier (231) . . . connects directly to a circuit board (230)”); APPLE-2001, ¶65.

There is also no disclosure in Jung of the electrodes 241 and 243 being ***wrapped around the edges*** of a carrier assembly. Rather, Jung discloses electrodes that, along with two sections of insulating material, form the outer structure of a biometric sensor. *See, e.g.*, EX1006, FIG. 2; APPLE-2001, ¶66. The electrodes are never described or shown to be “wrapped” so as to extend from an exterior surface to an interior surface of a carrier—Jung’s electrodes extend from top to bottom through the thickness of the biometric sensor 231. *Id.* Masimo’s assertion

that Jung discloses “electrodes [that] wrap around the edges of a carrier member” (Pet., 45) is belied by Jung’s actual teachings. APPLE-2001, ¶¶66-67.

Ultimately, the Petition’s obviousness theory relies on a purported structure that is not described by—and that is in fact contrary to—Jung’s actual teachings, confirming the Petition’s reliance on impermissible hindsight to follow the roadmap set forth by the claims. Because there is no support in Jung for positioning electrodes on a carrier member (or wrapping electrodes around the edges of a carrier member), the Petition fails to demonstrate a POSITA would have been prompted to modified Rothkopf according to Masimo’s altered version of FIG. 16 of Rothkopf (Pet., 46). For at least these reasons, the Petitioner fails to demonstrate that a POSITA would have modified Rothkopf in view of Jung to achieve elements 1g, 9g, and 15e.

B. The Petition Fails to Provide a Meaningful Motivation to Apply Jung to Rothkopf

The Petition’s sole alleged reason for its assertion that “[a] POSITA would be³ motivated to use the teachings of Jung to implement the carrier assembly

³ The Petition’s conclusory assertions regarding POSITA’s motivation *in the present day* fails to explain what a POSITA “would have” understood *at the time of the invention*, and provides yet another reason Masimo fails to meet its burden.

taught by Rothkopf,” is to “improve contact with the user’s skin by covering as much of the carrier member as possible without obstructing the optical sensor.” Pet., 45-46, 57, 64-65. But this assertion is not followed by any explanation or evidence as to how or why the purported motivation would “improve contact,” and fails to address Rothkopf’s original solution that provides contact with the user’s skin when worn. *Sony Corp. v. Fujifilm Corp.*, IPR2018-01751, Paper 14, 11 (PTAB April 12, 2019) (denying institution where the primary reference “already address[ed] the problem” purportedly motivating the combination and “it is not evident why [the primary reference] would have benefited from modifications based on [the secondary reference].”).

Masimo fails to demonstrate that its proposed modification of Rothkopf based on Jung would have achieved the sole purported motivation to “improve contact with the user’s skin.” Pet. 45. Rather, Masimo’s supposed “improve[ment]” based on the teachings of Jung would have been recognized by a POSITA as potentially **reducing** the contact area with the wearer’s skin, and thus

Costco Wholesale Corp. v. Robert Bosch, IPR2016-00035, Paper 16, 24-25 (April 25, 2016) (denying institution) (“This is not an artificial distinction; it is a substantive difference.”).

avoided. APPLE-2001, ¶¶56-62. This becomes clear from the straightforward teachings of Rothkopf in comparison to Masimo's proposed combination.

Rothkopf describes its device as a watch that makes contact with a user's wrist while being worn: "a first electrode 1601 and second electrode 1602 are *disposed on the rear face of the device 100*," and are "configured to *make contact with the skin of the user's wrist when the device is being worn*." EX1005, [0196]; APPLE-2001, ¶60.

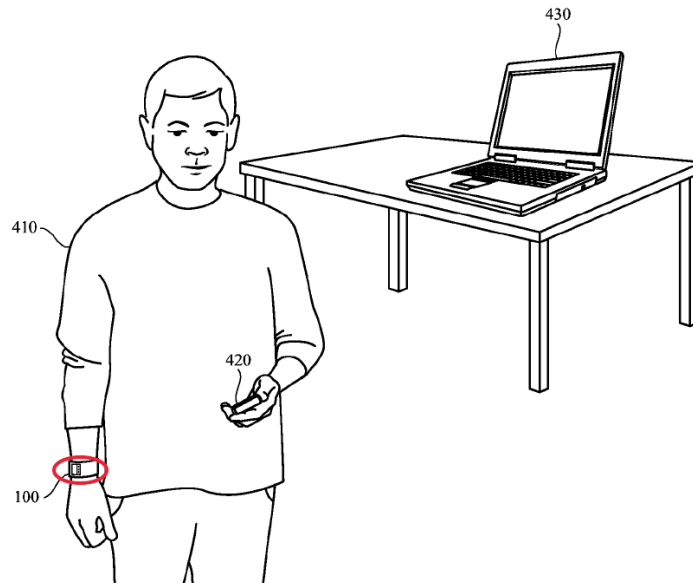


FIG. 4

EX1005, FIG. 4 (annotated). Based on Rothkopf's description that its existing first 1601 and second 1602 electrodes are "disposed on the rear face of the device 100" and "make contact with the skin of the user's wrist when the device is being worn," Rothkopf provides a surface area that provides consistent contact between the electrodes and skin of the user's wrist. APPLE-2001, ¶60.

The Petition ignores these teachings of Rothkopf, never alleging even a single example of how the electrodes of its proposed modification would “increase the contact area” or otherwise “improve contact,” as compared to Rothkopf’s existing solution. APPLE-2001, ¶¶61-62.

And the Petition ignores that its proposal would actually *reduce* contact and electrode surface area compared to electrodes that covered a substantial portion of Rothkopf’s “rear face.” EX1005, [0196] (“disposed on the rear face of the device 100”); APPLE-2001, ¶¶61-62. To the extent a POSITA would have been motivated to “increase the contact area” (which the Petition fails to demonstrate, and Jung never mentions), the Petition’s proposal achieves the opposite compared to a first electrode (blue) and second electrode (orange) disposed on available surface area of the “rear face”:

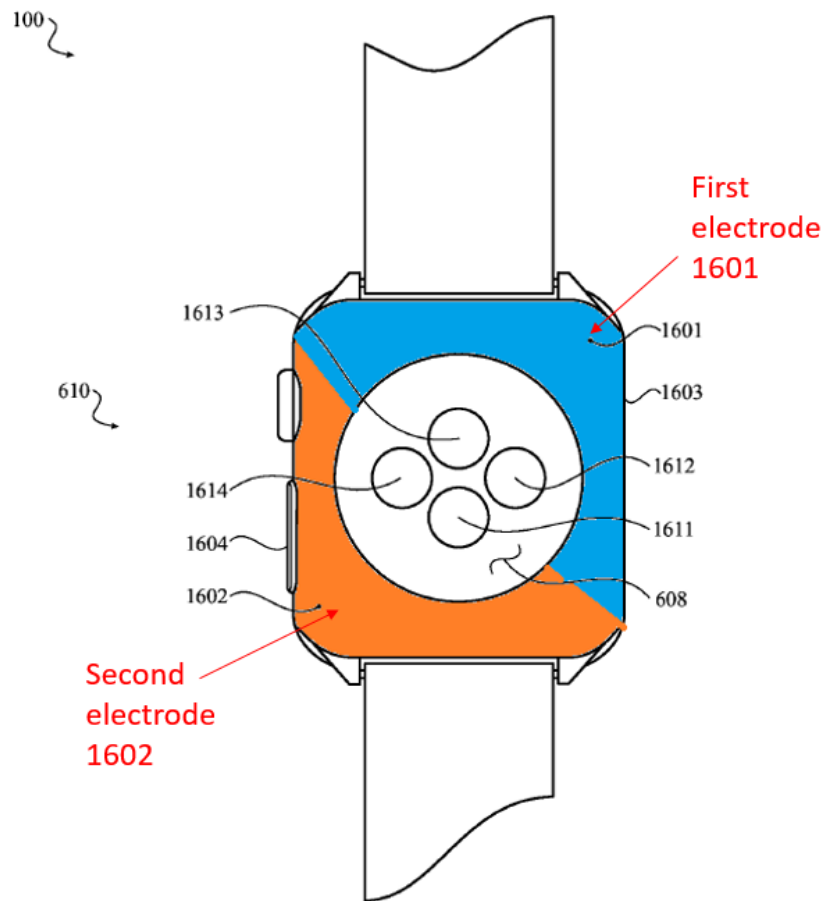
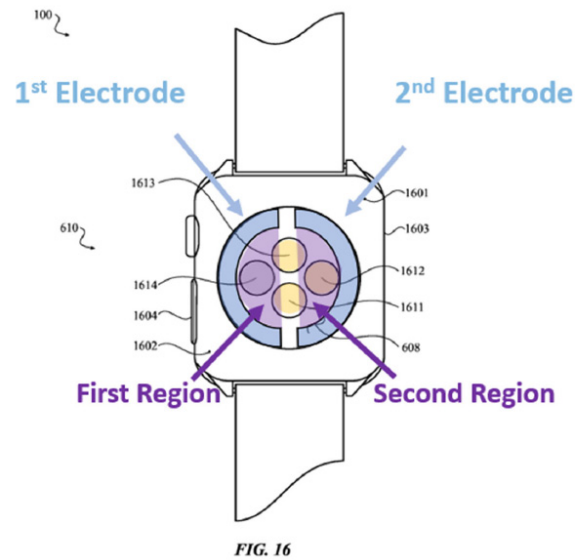
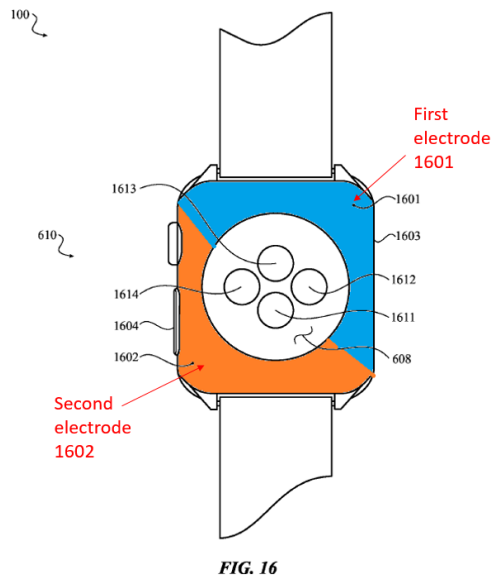


FIG. 16

EX1005, FIG. 16 (annotated), [0196].

Indeed, a side-by-side comparison of the unmodified watch of Rothkopf and the proposed modified device confirms that the proposed modification would actually significantly *decrease* the contact area of the skin-to-electrode interface, as compared to electrodes disposed on even a fraction of the available area on the “rear face.” APPLE-2001, ¶61.



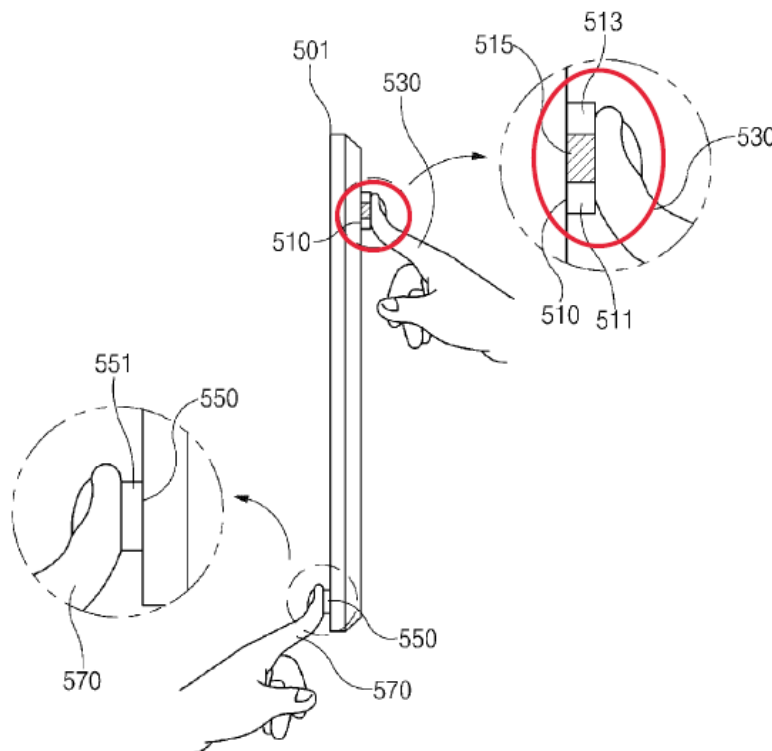
Unmodified Rothkopf device
(EX1005, FIG. 16)

Proposed modification of
Rothkopf based on Jung
(Pet., 46)

Ultimately, the proposed modification suffers from a readily apparent defect that undermines the sole purported motivation. The Petition ignores it. This is insufficient to meet Petitioner's burden. *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1363 (Fed. Cir. 2017) ("Evidence suggesting reasons to combine cannot be viewed in a vacuum apart from evidence suggesting reasons not to combine"). The Petition never addressed Rothkopf's original structure in providing contact between the electrode and skin.

The Petition also fails to cite anything in Jung in support of its proposal that the proposed modification would increase contact area in the specific manner

proposed. *See* Ground 2. The Petition does not cite any passage in Jung to “increase the contact area.” *Id.* Instead, Jung describes the opposite. Jung illustrates a relatively small “biometric sensor” with electrodes illustrated to be smaller than a fingertip despite implemented in devices (e.g., including a “smartphones,” “workstations,” “smart watches,” etc.) that can be significantly larger than Rothkopf’s watch. *See* EX1006, FIGS. 1A, 2, 5; [0028]. For example, as shown in FIG. 5 of Jung, Jung’s biometric sensors have a relatively small profile despite being part of a relatively large device, configured to contact only a fingertip of a user:



EX1006, FIG. 5 (annotated).

Rothkopf’s original solution already includes electrodes that contact a wearer’s wrist that are disposed on a “rear face” having a larger surface area—substantially larger than the area of a fingertip. EX1005, FIGs. 4, 16; APPLE-2001, ¶60. This provides yet another example of how application of Jung’s teachings to Rothkopf would have served to *decrease* rather than increase the contact area of the skin-to-electrode interface in Masimo’s proposed combination. The Petition again ignores it, highlighting the Petition’s improper reliance on hindsight.

To be clear, Masimo’s assertion lacks any meaningful evidentiary support, which is not remedied by citation to paragraphs 85-88 of the Oslan Declaration (EX1003). Pet., 45. These paragraphs merely repeat, nearly verbatim, the text in the Petition. *Compare* Pet., 41-46 *with* EX1003, ¶¶85-88. The Oslan Declaration thus lacks any additional reasoning, explanation, or citation to additional evidence. *See* EX1003, ¶88. Such declaration testimony that merely repeats the Petition “is entitled to little weight.” *See* 37 C.F.R. § 42.65(a); *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1362-64 (Fed. Cir. 2019) (reversing finding of obviousness and refusing to give weight to petitioner’s “*ipse dixit* declaration”); *Upjohn*, 225 F.3d at 1311; *Corning*, IPR2013-00048, Paper 94 at 33 (citing to *Ashland Oil*, 776 F.2d at 294) (“bare opinion is entitled to little weight in the absence of objective, evidentiary support”).

Additionally, the Petition’s proposed application of Jung to Rothkopf assumes that Rothkopf *already* includes the first and second electrodes on the rear cover 608 and that Jung merely teaches how to arrange such electrodes on the rear cover 608. Pet., 45-46. As discussed in Section V.A, *supra*, however, this assumption overstates the actual teachings of Rothkopf. The Petition’s Ground 2 analysis lacks any additional obviousness theory for positioning the electrodes in the proposed manner. Relatedly, Masimo’s assertion that a POSITA would have turned to Jung because it allegedly “teach[es] the use of electrodes on a biosensor carrier assembly” does not provide a proper motivation to combine because Jung actually discloses a different structure that does not provide support for this assertion. *Supra*, Section VI.A; Pet., 42; EX1006, [0045]-[0046], FIG. 2.

Ultimately, because Masimo’s proposed motivation for modifying Rothkopf based on Jung relies exclusively on an alleged “*increase* [to] the contact area of the skin-to-electrode interface,” (Pet., 45), the fact that the proposed modification actually significantly reduces the contact area of the electrodes with the wearer’s skin leaves the Petition with no reason to modify Rothkopf in the proposed manner. APPLE-2001, ¶¶61-62. Instead, the purported motivation is premised only on the claimed invention and disclosures of the ’054 patent. For this additional independent reason, Ground 2 fails.

C. Application of Jung to Rothkopf Would Not Have Led to the Claimed Invention

As discussed above, Masimo's proposed combination of Rothkopf with Jung proposes applying aspects of Jung's biometric sensor 231 to Rothkopf's rear cover 608. Pet., 43-46. However, even if a POSITA would have found a reason to apply Jung to Rothkopf (which the Petition does not demonstrate), Masimo's hindsight proposal never addresses Jung's teachings that its device is contacted with a user's finger, rather than continually worn against the user's skin. APPLE-2001, ¶¶70-71. In making its proposal, Masimo had the burden to at least address Jung's stated teachings. *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1069 (Fed. Cir. 2018) ("statements regarding preferences are relevant to a finding regarding whether a skilled artisan would be motivated to combine that reference with another reference."); *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1363 (Fed. Cir. 2017) ("Evidence suggesting reasons to combine cannot be viewed in a vacuum apart from evidence suggesting reasons not to combine"). This omission is particularly notable given Rothkopf describes third electrode 1603 and fourth electrode 1604, located along the sides of Rothkopf's device, and not the rear cover 608.

The biometric sensor 231 of Jung is described as mounting to an internal circuit board 230 and protruding through an opening in a battery cover 270 that is “detachable from the rear surface of the housing.” EX1006, [0045], [0050].

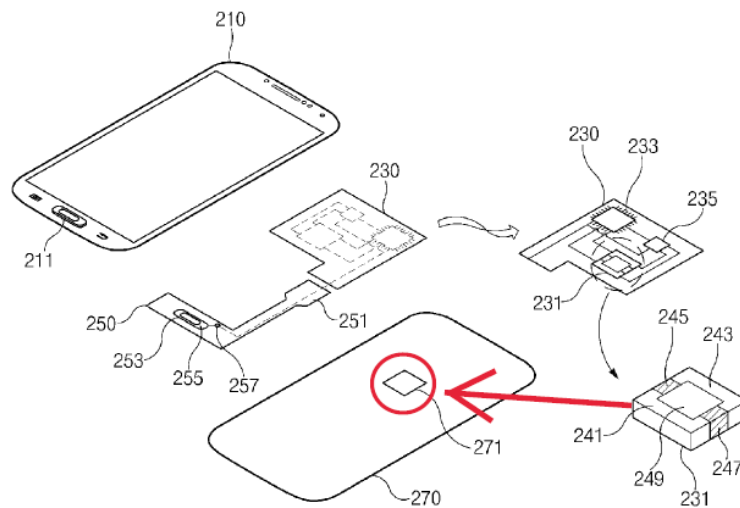
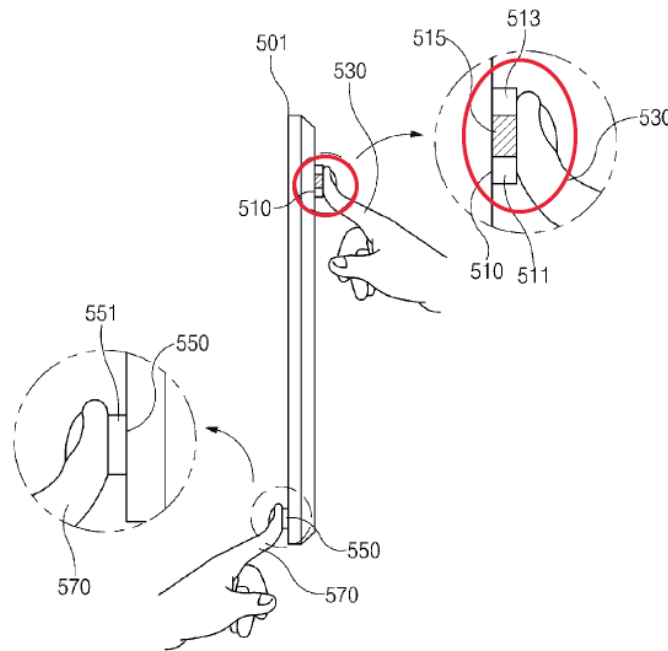


FIG. 2

EX1006, FIG. 2 (annotated); APPLE-2001, ¶¶69-70. As shown in FIG. 5, this biometric sensor is configured to operate by making contact with a user’s finger rather than being continually worn against the user’s skin:



EX1006, FIG. 5 (annotated); APPLE-2001, ¶70.

Furthermore, the drastic 90 degree angles of Jung's biometric sensor clearly indicate that it is not intended to be worn against a user's skin (such as against the wrist) as a POSITA would have recognized that such drastic angles would dig into the wearer's skin in an uncomfortable manner. APPLE-2001, ¶70.

Ignoring Jung's teachings and the detrimental effect of its proposal, Masimo provides no rationale for why the teachings regarding Jung's biometric sensor 231, configured to be contacted by a user's fingers, would have been applied to the rear cover 608 of Rothkopf, especially where Rothkopf describes finger contact sensors 1603 and 1604 on the sides of the device housing. APPLE-2001, ¶¶71-72.

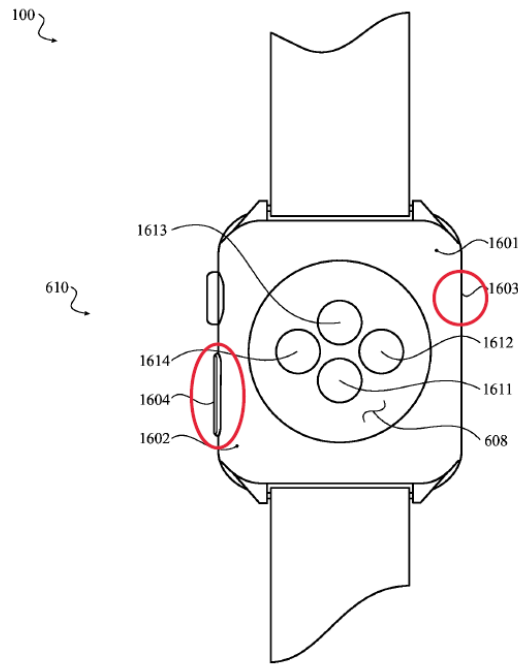


FIG. 16

EX1005, FIG. 16 (annotated); *see also* EX1005, [0196] (“the third 1603 and fourth 1604 electrodes are configured to come into contact with the skin of the user's other hand (that is not wearing the device 100). For example, the third 1603 and fourth 1604 electrodes may be contacted when the user pinches the device 100 between two digits (e.g., a forefinger and thumb).”

Here again, Petitioner’s disregard of the actual teachings of Rothkopf and Jung in favor of its own proposal, without explanation or support confirms that the proposed combination is therefore rooted in hindsight based on the disclosures of the ’054 patent itself. Simply put, the Petition offers no valid rationale for why application of Jung to Rothkopf would have resulted in the device depicted on page

46 of the Petition. APPLE-2001, ¶72. For this additional reason, Ground 2 fails as the Rothkopf-Jung combination fails to disclose elements 1g, 9g, and 15e.

VII. Grounds 3-3C: The Combination of Rothkopf and Paulke is Based on Hindsight and Fails to Provide the Claimed Invention

The combination of Rothkopf with Paulke fails for two additional reasons:

(1) the Petition fails to identify any motivation to apply Paulke to Rothkopf in the proposed manner; and (2) the Petition overstates the teachings of Paulke and the proposed combination is based on Hindsight.

A. The Petition Fails to Provide Any Motivation to Apply Paulke to Rothkopf

Ground 3 of the Petition relies on the hindsight rationale that a “POSITA would position the electrodes as taught by Paulke in order to maintain contact with the user’s skin.” Pet., 77. In doing so, Masimo ignores that Rothkopf’s original solution undermines the alleged motivation because it was already configured to achieve that benefit (EX1005, [0196]), giving rise to an especially strong “inference of nonobviousness.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009) (“An *inference of nonobviousness is especially strong* where the prior art’s teachings undermine the very reason being proffered as to why a person of ordinary skill would have combined the known elements.” (emphasis added)). Critically, the Petition ignored the fact that Rothkopf’s original solution already served to maintain contact with the user’s skin

when the device was worn. *Sony Corp. v. Fujifilm Corp.*, IPR2018-01751, Paper 14, 11 (PTAB April 12, 2019) (denying institution where the primary reference “already address[ed] the problem” purportedly motivating the combination and “it is not evident why [the primary reference] would have benefited from modifications based on [the secondary reference].”); APPLE-2001, ¶60.

In more detail, the Petition relies on a theory that a “POSITA would be motivated to use the teachings of Paulke to implement the carrier assembly taught by Rothkopf,” and to do so “would position the electrodes as taught by Paulke in order to maintain contact with the user’s skin.” Pet., 77. That is it. The sole purported motivation articulated in the Petition is to “maintain contact with the user’s skin.” See Pet., Ground 3 Analysis.

Critically, however, Rothkopf already provides for this purported benefit. APPLE-2001, ¶60. Rothkopf describes a wrist worn device having “a first electrode 1601 and second electrode 1602” that are “disposed on the rear face of the device 100” and “configured to *make contact with the skin of the user's wrist when the device is being worn.*” EX1005, [0196].

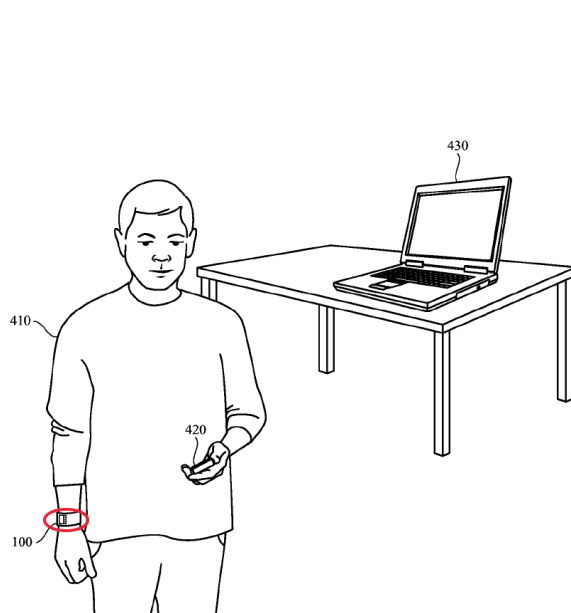


FIG. 4

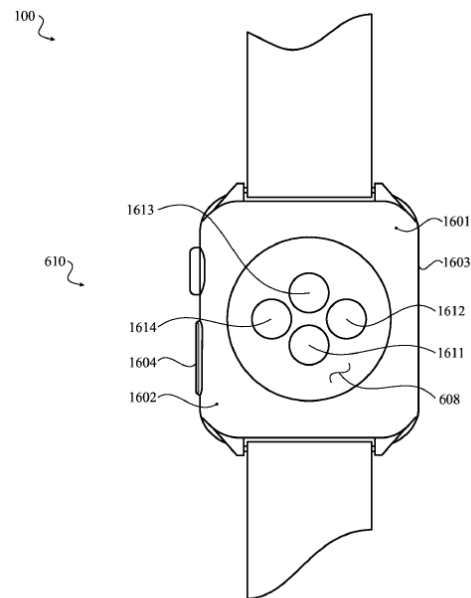


FIG. 16

EX1005, FIGS. 4, 16 (annotated).

The Petition fails to provide any explanation why a POSITA would have been motivated to modify Rothkopf to “maintain contact with the user’s skin,” when Rothkopf already provides for electrodes disposed on a “rear face” of Rothkopf’s wrist-worn device that contacts the user’s skin when worn. EX1005, [0196] (“make contact with the skin of the user’s wrist when the device is being worn.”); APPLE-2001, ¶¶60-62. *Microsoft Corp.*, IPR2018-00026, Paper 7, 15; *see also DePuy*, 567 F.3d at 1326 (“inference of nonobviousness is especially strong”); *Polaris*, 882 F.3d at 1069. While the Petition erroneously ignores Rothkopf’s original solution and the law, it would be reversible error for the Board to do the same.

The Petition's Ground 3 obviousness analysis suffers from another fatal defect. Similar to the combination of Rothkopf with Jung discussed in Section VI.B, *supra*, Masimo ignores the detrimental effect of its proposed combination. The proposed modification could actually significantly **decrease** the contact area of the skin-to-electrode interface, as compared to electrodes disposed on even a fraction of the available area on the "rear face" of Rothkopf's original design. *Supra*, VI.B; APPLE-2001, ¶¶61-62, 58. Masimo's own assertions indicate a POSITA would have avoided such a result, asserting that a decrease in the contact area of the first and second electrodes would have led to increased impedance and degraded the ability to reduce motion artifacts. Pet., 45; APPLE-2001, ¶62.

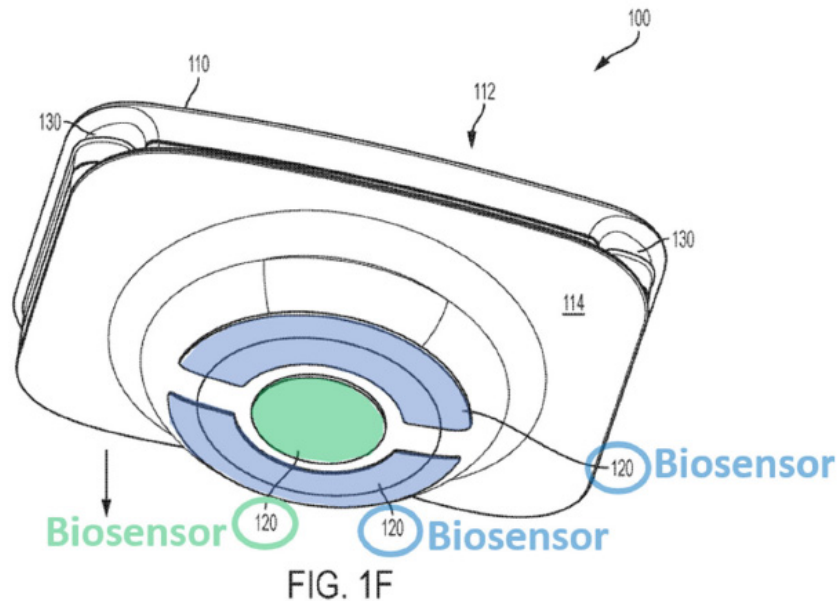
To be clear, the lack of any sufficient motivation is not remedied by Masimo's assertion that "[a] POSITA would have expected success in making this combination as it is a mere rearrangement of compatible components in a predictable way to obtain a predictable result." Even if true (which the Petition fails to demonstrate) this is at best an assertion that a POSITA **could** have applied Paulke to Rothkopf in the proposed manner, not a rationale as to **why** a POSITA would have done so. Pet., 78. The Petition had the burden of showing that the claimed invention **would** have been obvious at the time of the invention, not merely whether a POSITA **could** have modified the prior art device. *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) ("[O]bviousness concerns

whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.” (emphasis in original)). Indeed, a proper obviousness analysis must “explain *why* a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does.*” *ActiveVideo Networks, Inc. v. Verizon Commc’n, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012); *see also TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (“Although the *KSR* test is flexible, the Board must still be careful not to allow hindsight reconstruction of references . . . *without any explanation as to how or why* the references would be combined to produce the claimed invention.”). Here, Masimo has provided no discussion of a motivation as to why a POSITA would have modified Rothkopf based on Paulke in the proposed manner. For this reason alone, Ground 3 fails.

B. The Proposed Rothkopf-Paulke Combination is Based on Hindsight and Not Supported by the References Themselves.

The Petition overstates the teachings of Paulke and the proposed combination of Rothkopf with Paulke is based on hindsight rather than any actual disclosure of the references. In describing the proposed combination of Rothkopf with Paulke, Masimo asserts that Paulke discloses “two biosensors 120 (annotated in blue) may be first and second electrodes (such as for galvanic or ECG

measurements) and biosensor 120 (annotated in green) may be for optical reflectance of blood vessels or oxygen saturation (PPG)” followed by this annotated figure from Paulke:



Pet., 76-77. This assertion by Masimo drastically overstates the disclosures of Paulke and relies on disclosures found only in the '054 patent itself to fill in the gaps. APPLE-2001, ¶¶73-74.

Rather than describing two electrodes surrounding a PPG sensor, as Masimo asserts, Paulke simply states that “[b]iosensor(s) 120 protruding from the wrist-facing inner surface 114 of housing 110 of biosensor module 100 may include any suitable number and/or type(s) of biosensors.” EX1007, 14:26-28. Paulke then goes on to provide a list of “suitable biosensors” that includes 19 different sensor examples, with no specific arrangement for these various “suitable biosensors.” *Id.*,

15:12-18; APPLE-2001, ¶74. Masimo's assertion that Paulke discloses two electrodes arranged around a PPG sensor is based purely on hindsight based on the disclosures of the '054 patent itself, and not on any actual disclosure of Paulke. APPLE-2001, ¶74 ("Dr. Oslan's assertion that Paulke discloses two electrodes arranged around a PPG sensor is *simply not supported*."). There is therefore no support for the alleged combination of Rothkopf with Paulke depicted in the Petition in which electrodes are added to Rothkopf's rear cover 608 encircling the emitter windows and detector window. Pet., 77-78; APPLE-2001, ¶¶73-74. For this additional reason, Ground 3 fails.

VIII. Conclusion

For at least the reasons discussed above, the Board should deny the Petition.

Respectfully submitted,

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CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response to Petition totals 10,506, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

Date: June 28, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4) and 42.205(b), the undersigned certifies that on June 28, 2023, a complete and entire copy of this Patent Owner's Preliminary Response and supporting exhibits were provided via email, to the Petitioner by serving the email correspondence address of record as follows:

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2023-06-29 [008] Patent Owner's Preliminary
Response for D'842 Patent (IPR2023-00702)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL
BOARD

MASIMO CORPORATION
Petitioner,

v.

APPLE INC.,
Patent Owner

Case IPR2023-00702
U.S. Patent D947,842

PATENT OWNER'S PRELIMINARY RESPONSE

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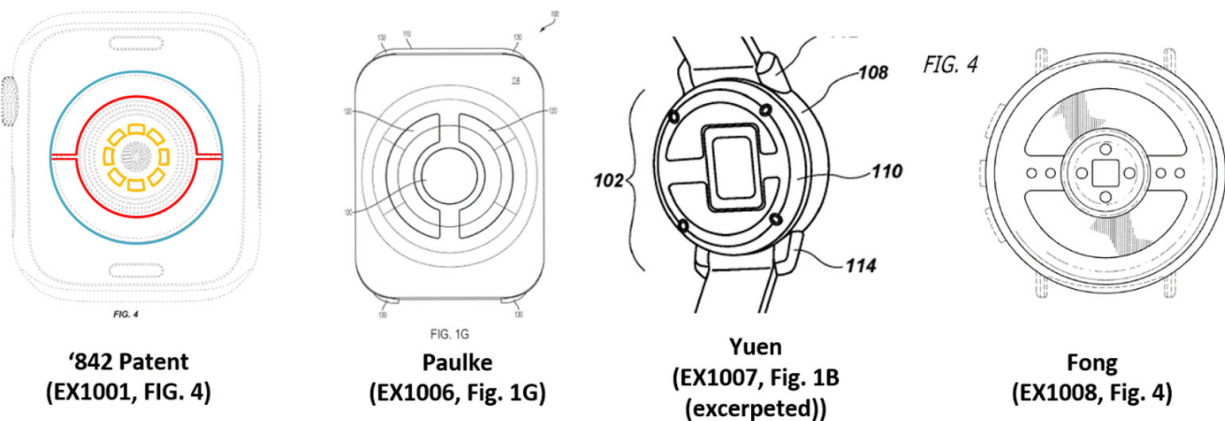
Case No. IPR2023-00702
Attorney Docket No: 50095-0147IP1

LIST OF EXHIBITS

Exhibit Number	Description
2001	Declaration of Lance Gordon Rake
2002	Replacement Drawings filed in U.S. Design Patent Application 29/816,024 on December 14, 2021
2003	<i>Aries Watches Watch AW80 – Unisex,</i> https://allegro.pl/oferta/smartwatch-zegarek-ekg-pulsoksymetrtermometr-pl-9927412179 .
2004	<i>P11 Plus 0.96 Inch Screen ECG+HRV Smart Health Bracelet, Support Body Temperature, Dynamic Heart,</i> Newegg.com, http://www.newegg.com/p/3EG-000R-000F7 .

I. INTRODUCTION

Masimo’s Petition challenging U.S. Patent No. D947,842 (“the ’842 patent”) is fatally deficient in multiple ways. The Petition fails to identify any reference that has an appearance “basically the same” as the claimed design’s series of concentric circle shapes, and thus none of Grounds 1-3 include a proper *Rosen* reference. For example, Paulke, Yuen, and Fong each altogether lack an inner circular shape formed by an arrangement of multiple elongated four-sided shapes (yellow) that is central to the claimed design’s concentric circle overall appearance. This prominent feature, and resulting overall appearance, is simply not present in any of the primary references.



This alone provides an independent reason why Paulke, Yuen, and Fong lack an appearance that is “basically the same” as the claimed design. Together with multiple other readily apparent differences between the claimed design and Paulke, Yuen, and Fong—many of which are never specifically addressed by the Petition—

the Petition is woefully deficient in demonstrating any of these references are *Rosen* references.

The Petition relies on layers of yet additional factual and legal errors. Masimo's proposed claim construction focuses on design concepts that fail to accurately portray the actual claimed design, and which improperly "factors out" multiple ornamental features significant to the design's cohesive overall appearance. Rather than address the claimed aspects that contribute to the design's overall appearance, and their differences from the prior art, Masimo's analysis obscures the design without the required analysis relative to the cited references, each of which have fundamental differences that contrast with the '842 patent's overall appearance. These deficiencies in the cited art are further confirmed by Masimo's attempt to make yet further layers of modifications beyond what are depicted by these references.

For at least the reasons explained below, Masimo fails to demonstrate a reasonable likelihood that the design claim is unpatentable. The Petition should be denied.

II. BACKGROUND

Apple is known as an innovator in consumer products and a leader in industrial design. Apple's innovative products are produced through its significant investment in research and development in technology and product design. Each

product is meticulously created to be appealing and sleek, with numerous iterations to perfect the design of each product and to incorporate aesthetic themes that run through the Apple products.

The Apple Watch is no exception, and has been a best-seller and consumer favorite in part due to its innovative, stylish, and distinctive style. The design claimed in the '842 patent is the result of tremendous design efforts to produce a consumer-wearable product incorporating signature Apple design qualities such as elegant and simple designs that echo themes in other Apple products. As discussed in greater detail below, a Designer of Ordinary Skill (“DOSA”) would have recognized these qualities of the overall claimed design, and appreciated the efforts underlying the design that immediately distinguish its appearance from prior designs.

III. LEVEL OF ORDINARY SKILL

For the purposes of this case, a Designer of Ordinary Skill in the Art (“DOSA”) would have a degree in Industrial Design or Mechanical Engineering, and at least two years of professional experience creating Industrial Designs of consumer products. EX2001, ¶19.

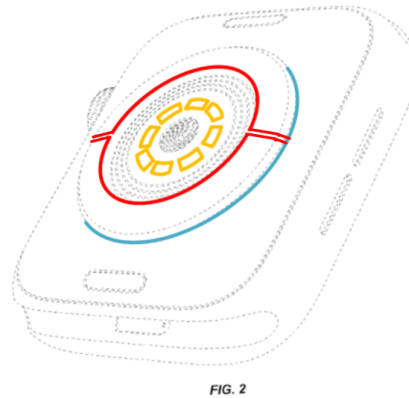
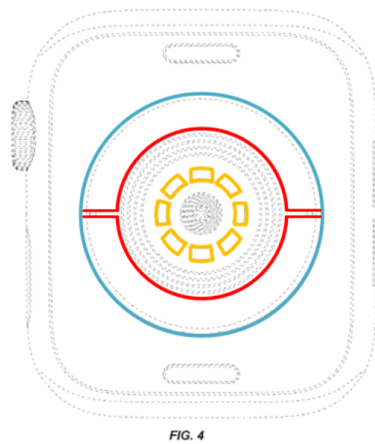
IV. MASIMO CANNOT PREVAIL ON ANY CHALLENGED CLAIM

A. Masimo's Proposed Claim Construction Ignores Features of the Claimed Design and Relies on General Design Concepts

Masimo's proposed claim construction is deficient because it fails to address prominent features of the claimed design and, critically, the contributions of those features to the overall appearance. *See Skechers U.S.A., Inc. v. Nike, Inc.*, IPR 2017-00617, Paper 13 at 7-8 (PTAB July 6, 2017) ("While we recognize that the illustration, rather than a verbal description, is the better representation of the claimed design ... Petitioner's verbal description in these cases does not go far enough."). While a verbal description may not always be necessary, any verbal description must identify readily observable features of the claimed design that impact its overall appearance. *See Skechers*, IPR2017-00617, Paper 13 at 8; *see also Vitro Packaging, LLC v. SaverGlass, Inc.*, IPR2015-00947, Paper 13 at 5 (PTAB Sept. 29, 2015) ("We are not persuaded that this is an accurate portrayal of the claimed bottle because it focuses on general dimensions, ratios, and elements common to many bottles."). As described below, this error infects each of Masimo's grounds, and therefore compels denial of the Petition. *See, id.* at 13 (denying institution, stating, "[w]e do not find Petitioner's arguments persuasive because Petitioner focuses on design concepts rather than actual appearance and specific design characteristics." (citation omitted)).

The '842 patent claims a unique, elegant design for an “electronic device” having an overall appearance of multiple concentric circles, evoking a bulls-eye, target, or ripples in a pond. EX2001, ¶¶20-27; EX1001, Figs. 1-9; EX2002, Figs. 1-9.¹ As illustrated below, the claimed design includes a circular element having a concentric circular arrangement contained within an outermost continuous circle (blue). *Id.* An outer circular shape is formed by thin, elongated arches positioned within the outermost continuous circle (red). *Id.* The inner edges of the arches are raised relative to the outermost continuous circle, resulting in the appearance that the arches protrude upward from the outermost continuous circle. Moving toward the center of the concentric circular arrangement, spaced apart from the outer circular shape, an inner circular shape is formed by an arrangement of multiple elongated four-sided shapes (yellow). *Id.* The inner circular shape is smaller in diameter than the outer circular shape. *Id.*

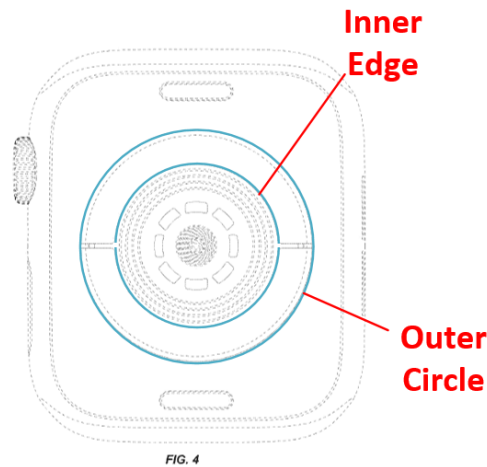
¹ EX2002 is the supplemental drawings filed with the USPTO on December 14, 2021.



EX2001, ¶20 ((EX1001, Figs. 2 and 4 (annotated))).

Each of these aspects are readily observable features that contribute to the claimed design's overall appearance that evokes concentric circles within the outermost continuous circle. *Id.* Moving inward from the outermost continuous circle, the arch shapes are positioned such that the outer circular shape appears as a unified ring or circular shape. *Id.*

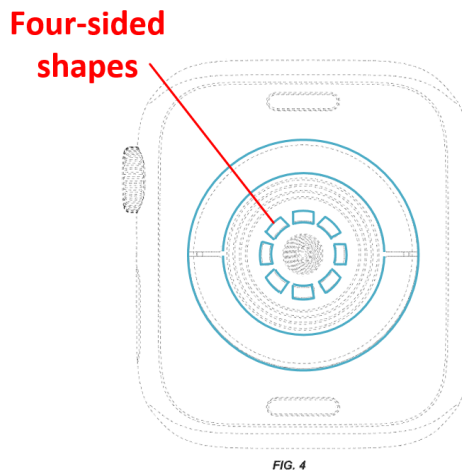
The outer circular shape is formed by elongated arches. The distance between the inner edge of the arches and the outermost continuous circle is small compared to the diameter of the outermost continuous circle, contributing to the appearance of an elegant, precise and streamlined shape. EX2001, ¶21.



EX2001, ¶21 (EX1001, Fig. 4 (annotated)).

Toward the center of the concentric circular arrangement from the outer circular shape is an inner circular shape formed by multiple elongated four-sided shapes. The elongate shape of the four-sided shapes that reach toward one another emphasize the arrangement's circular shape, and complement the curvature of the outermost continuous circle and the outer circular shape formed by the arches.

EX2001, ¶¶22-24.



EX2001, ¶¶23-24 (EX1001, Fig. 4 (annotated)).

The diameter of the inner circular shape formed by the multiple four-sided shapes is smaller than the diameter of the outer circular shape formed by the arches. Together with the arch shapes and outermost continuous circle, the inner circular shape formed by the multiple four-sided shapes contribute to an overall appearance of multiple concentric circles, evoking a bulls-eye, target, or ripples in a pond. EX2001, ¶24. The concentric circles evoked by the outermost continuous circle, inner edges of the arch shapes, and outer edges of the multiple four-sided shapes are highlighted in the annotated figure below.

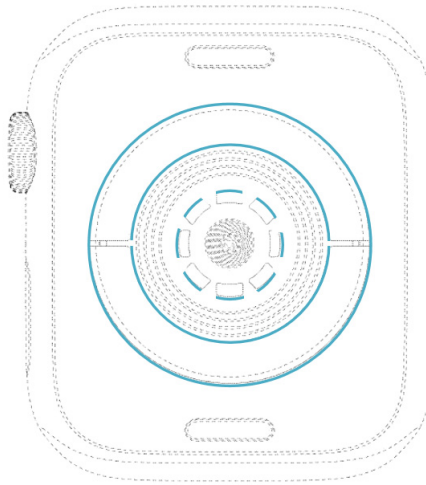


FIG. 4

EX2001, ¶¶25-26 (EX1001, Fig. 4 (annotated)).

Each of the elements of the outermost continuous circle, arches forming an outer circular shape, and multiple four-sided shapes forming an inner circular shape smaller in diameter than the outer circular shape contribute to this overall design, by depicting continuous and concentric circles of decreasing diameter. EX2001, ¶¶25-27.

The concentric rings suggested by the elements of the outermost continuous circle, arch shapes, and plurality of four-sided shapes, are prominently visible. EX2001, ¶27. The physical position of the arch shapes, and their elongate proportions compared to the diameter of the outermost continuous circle, suggests a unified, continuous circle despite the arch shapes not touching each other. Similarly, the positions of the four-sided shapes are close to one another, with their elongate

proportions extending towards one another, accentuating a circular appearance formed by the four-sided shape's outer and inner edges. *Id.*

Masimo largely ignores these immediately observable features in its claim construction. *See* Pet., 11. For example, Masimo describes the '842 patent's design as "two arc-shaped portions (gray) protruding from the back of an electronic device and surrounding a circular arrangement of rectangles (blue)." *Id.* But this construction ignores many of the prominent features noted above, including 1) the outermost continuous circle, 2) the unified circular appearance provided by the arches, 3) the distance between the inner edges of the arches and the outermost continuous circle that is relatively small and complementary to the proportions of other features, and 4) the elongated four-sided shapes arranged to complement the curvature of the outermost continuous circle and the arch-shaped portions. Each of these features contribute to the unique, concentric circular overall appearance, and are significant to the ordinary designer. EX2001, ¶28.

Ultimately, Masimo's generic description of design concepts and omission of the appearance provided by the actual claimed shapes and their relationships fails to recognize the claimed design's overall impression. These omissions taint each of the Petition's grounds, warranting denial of the petition. *Infra*, §§IV.C-E; *see also*, *Macsports, Inc., v. Idea Nuevo, Inc.*, IPR2018-01006, Paper 6 at 12 (PTAB Nov. 13,

2018) (denying institution); *Vitro Packaging*, IPR2015-00947, Paper 13 at 5 (denying institution); *Skechers*, IPR2017-00617, Paper 13 at 13 (denying institution).

B. Masimo’s Proposed Construction Erroneously “Factored Out” Purportedly Functional Aspects of the Design

In an attempt to map the ’842 patent’s unique design to the prior art, Masimo relies on a construction that improperly “factored out” meaningful aspects of the design. Even if particular aspects of the design are associated with a functional purpose, they have ornamental contributions that cannot be excluded from the claimed design. Masimo’s proposal is based on legal error. Additionally, Masimo improperly imports purported functionality from a commercial embodiment, ignoring that such functionality is not required or mentioned by the ’842 patent, and ignores the numerous alternative designs that can achieve the same or similar functionality.

1. Even if Particular Features are Associated with a Functional Purpose, They Contribute to the Overall Appearance of the Design and Cannot be “Factored Out”

As the Federal Circuit explained in *Sport Dimension*, “[w]hile we agreed that certain elements of the device were functional, their functionality did not preclude those elements from having protectable ornamentation.” *Sport Dimension, Inc. v. Coleman Co.*, 820 F.3d 1316, 1321 (Fed. Cir. 2016) (“in no case did we entirely

eliminate a structural element from the claimed ornamental design, even though that element also served a functional purpose”). Masimo’s “construction in this case conflicts with that principle of design patent claim construction because it eliminates whole aspects of the claimed design.” *Id.*; Pet., 47 (“should be disregarded”); 49 (“should be disregarded”); 50 (“should be disregarded”); 52 (“should be disregarded” and “design encompasses *any arrangement* of rectangles surrounded by and spaced apart from the arc-shaped portions.”); 69; 71; 72; 90; 92; 94; 96. Even if particular aspects of the claimed design can have a functional purpose (which Masimo fails to demonstrate), they are still significant to the overall ornamental appearance of the ’842 patent. Masimo’s assertions that these features be “factored out” is based on legal error and must be rejected.

The Petition conspicuously omits discussion of *Sport Dimension* and subsequent decisions highlighting that “in no case did [the Federal Circuit] entirely eliminate a structural element from the claimed ornamental design,” even if the element also served a functional purpose. *Sport Dimension*, 820 F.3d at 1321. Masimo engages in the same prohibited practice as the *Ethicon* District Court, relying on a construction that “factored out” features from the claimed design. *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1328 (Fed. Cir. 2015) (reversing district court that “found that because each of the designs of the trigger, torque knob, and button must be ‘factored out’ under *Richardson v. Stanley Works*,

. . . the Design Patents had no scope.”). It would be reversible error for the Board to do the same.

“[T]he claim construction in *Richardson* did not exclude those components in their entirety. Rather, the claim construction included the ornamental aspects of those components,” and “[a]s such, the language ‘dictated by their functional purpose’ in *Richardson* was only a description of the facts there; it did not establish a rule to eliminate entire elements from the claim scope.” *Apple Inc. v. Samsung Elecs. Co.*, 786 F.3d 983, 998 (Fed. Cir. 2105). Masimo’s legal error taints the entirety of its analysis, providing an independent reason that its construction is unsupportable. Each of the outermost continuous circle, outer circular shape provided by the arch-shaped portions, inner circular shape provided by the arrangement of elongated four-sided shapes, and spacing of the outermost continuous circle, arch-shaped portions’ inner edges, and four-sided shapes relative to one another has an ornamental contribution significant to the claimed design’s overall appearance. EX2001, ¶¶20-27, 29.

Masimo’s claim construction is premised on a further legal error by asking the Board to consider each aspect of the claimed design separately. Contrary to Masimo’s assertions that particular aspects be “factored out,” the Federal Circuit has repeatedly explained “design patents protect the **overall** ornamentation of a design, not an aggregation of separable elements.” *Sport Dimension*, 820 F.3d at 1322. The

features depicted by the '842 patent's claimed design must be considered together in view of the overall appearance achieved by the claimed features—here, including a series of concentric circles reminiscent of a bullseye or ripples in a pond. EX2001, ¶¶24-27. By “factoring out” structural elements from the claim, Masimo “improperly converted the claim scope of the design patent from one that covers the overall ornamentation to one that covers individual elements.” *Sport Dimension*, 820 F.3d at 1322. This is improper.

2. Masimo's Focus on Functionalities of the Commercial Embodiment of the '842 Patent Constitutes Legal Error

Masimo's functionality discussion is based on yet another independent error. Masimo's attempt to “factor out” design aspects is premised on purported functionality that is not required, or even mentioned, by the '842 patent. Instead, Masimo's functionality arguments improperly incorporate uses of an underlying commercial product into the design of '842 patent. For example, Masimo's functionality arguments are premised on the presence of wireless charging components located between the arch-shaped features and the arrangement of four-sided shapes. Pet., 26 (“the claimed arc-shaped portions' design is also dictated by the need to ensure that the electrodes do not interfere with other Watch components.”); 18 (referring to “wireless charging” of a commercial product). But nothing in the '842 patent tethers the claimed ornamental shapes to wireless charging

components, or any other particular charging component—the ’842 patent is directed to an “electronic device” without any requirement of wireless charging at all. *See Berry Sterling Corp. v. Pescor Plastics, Inc.*, 122 F.3d 1452, 1455 (Fed. Cir. 1997) (vacating summary judgment of invalidity on functionality because district court erred in considering functional limitations of commercial embodiment rather than the claimed design). Indeed, “the court cannot use the limitations of the commercial embodiment of the underlying article of manufacture to impose limitations on the scope of the design patent.” *Id.* Masimo’s functionality arguments are premised on features extraneous to the claimed design, rather than the actual features shown and described by the ’842 patent. *See id.* This is yet a further independent reason that Masimo’s claim construction is erroneous and cannot be adopted.

3. A Multitude of Alternative Designs Highlight the Ornamental Contributions of Features of the Claimed Design

There is no dispute that “[w]hether suitable alternative designs are available is ‘an important – if not dispositive – factor in evaluating the legal functionality of a claimed design.’” *Ethicon*, 796 F.3d at 1329-30; *Pet.*, 11. Here, multiple suitable alternative designs exist as described below that provide the same or similar functionality. The elements of the ’842 patent contribute to its overall appearance, and cannot be “factored out.”

For example, the Aries AW80 watch is described as enabling measurement of ECG, heart rate tracking, and blood oxygen tracking, and uses a magnetic charging cable. *See* EX2003, 1, 5-6, 11, 13-16. The AW80 accomplishes its functionalities with a design that includes opposed shapes on either side of a central band including square and rectangular sensors, and thus has a rear face having an appearance significantly different than the '842 claimed design. EX2001, ¶31.



EX2003, 6-7.

As another example, the P11 Plus watch is described as enabling measurement of ECG, heart rate tracking, and blood oxygen tracking. *See* EX2004, 1-3. The P11 Plus accomplishes its functionalities with a design that includes three rectangular electrodes, such that its rear face has a significantly different appearance than the '842 claimed design. EX2001, ¶32.



EX2004, 3.

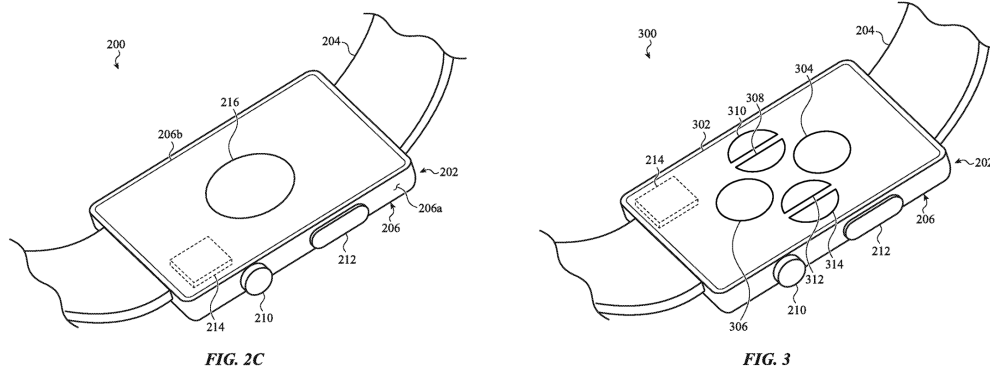
The Petition is silent as to these alternative designs.

As discussed in further detail below, references cited by the Petition itself also confirm the existence of alternative designs as to each of the features identified by Masimo as purportedly functional, and confirm the features identified by Masimo contribute to the claimed design's ornamental appearance. *See e.g.*, Pet., 24, 33-34.

a) The Specific Arrangement of the Arch-Shaped Portions is Decorative and Contributes to the Unique Overall Appearance

Masimo points to the '157 utility patent (U.S. 10,610,157) as explaining that the electrodes are “arc-shaped and positioned” and “sized” to achieve the functions of providing electrical contact between the electrodes and a wearer's skin. Pet., 24

(citing EX1024, 17:20-34; 13:54-59). The '157 patent itself, however, discloses multiple arrangements, shapes, and sizes of electrodes to achieve the stated purpose while having different appearances including a single rear-facing electrode (Fig. 2C), an arrangement of half-circle and circular electrodes (Fig. 3), or other arrangements. *See* EX1024, 17:24-34; EX2001, ¶¶35-37.



EX1024, Figs. 2C and 3.

b) The Specific Arrangement of the Four-Sided Shapes is Decorative and Contributes to the Unique Overall Appearance

The multitude of alternative designs confirm that the '842 patent's particular appearance, including number, size, and configuration of four-sided shapes contributes ornamentally to the overall appearance. For example, the '157 Patent reflects multiple alternative arrangements of photodiodes that enable functionality of emitting and receiving light from the wearer's skin. *See* EX1024, 15:34-40, 13:59-63; *see also* EX2001, ¶¶38-39. Other examples of alternative designs are

provided by Masimo's citation to a plethora of references illustrating different photodiode configurations. *See* Pet., 34 (citing EX1038, 2-3 and EX1014, ¶¶68).

**c) The Overall Circular Shape is Decorative and
Contributes to the Unique Overall Appearance**

Masimo contends that the overall circular shape of the claimed sensor design is functional. Pet., 33-34. But, here again, Masimo's own citations demonstrate multiple suitable alternative designs having non-circular shapes. EX2001, ¶¶40-41; EX1038, 2-3.

**C. Ground 1: Masimo Fails to Demonstrate that the Claimed Design
is Obvious Based on Paulke in View of Mendelson**

Ground 1 is fatally flawed because the Petition simply fails to demonstrate that Paulke is a proper *Rosen* reference in view of major aspects of the design that are entirely absent. The '842 patent depicts a design having a streamlined appearance of multiple concentric circles, including an outermost continuous circle (blue), an outer circular shape formed by multiple thin, elongated arches (red), and an inner circular shape formed by an arrangement of multiple elongated four-sided shapes (yellow). *Supra*, §IV.A.

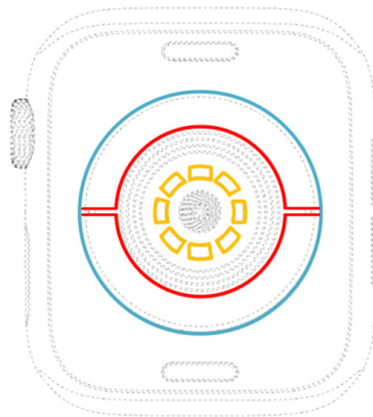


FIG. 4

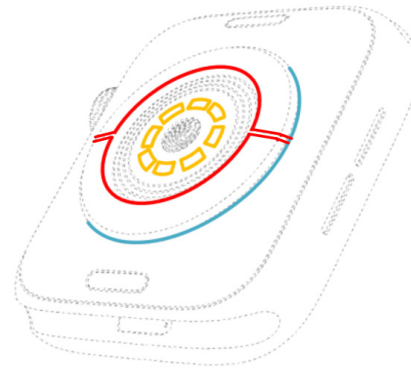


FIG. 2

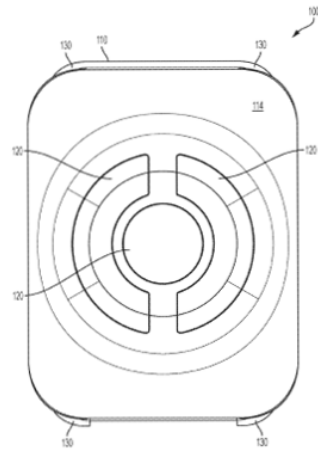


FIG. 1G

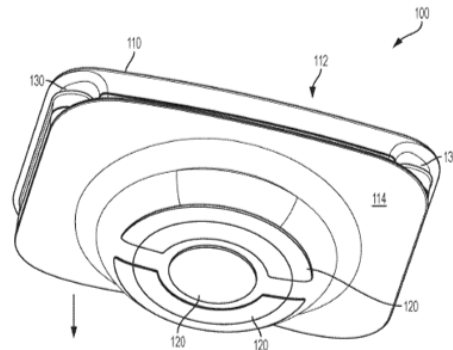


FIG. 1F

EX2001, ¶42-45 (Top: EX1001, Figs. 2 and 4 (annotated); Bottom: EX1006, Figs. 1G, 1F).

While the inner circular shape formed by multiple four-sided shapes (yellow) is central to the claimed design's concentric circle overall appearance, it's entirely absent from Paulke (*infra*, §IV.C.4.a). Given this prominent difference, Paulke simply lacks an overall appearance that is “basically the same” as the claimed design.

Moreover, the claimed design’s overall appearance differs prominently from Paulke due to the outer circular shape formed by the arches (*infra*, §IV.C.4.b), and the relationship between the outer continuous circle and the arches (*infra*, §IV.C.4.c). Each of these differences alone result in an overall appearance that is not “basically the same” as the claimed design. Collectively they compel such a finding. Ground 1 fails for these independent reasons.

Beyond failing to demonstrate a proper *Rosen* reference, the Petition relies on layers of modifications that significantly change Paulke’s appearance, and that are not depicted by Paulke or Mendelson, in an attempt to recreate the claimed design. These additional defects render the Petition’s Ground 1 obviousness theories woefully deficient, and the gaps in its analysis highlight that Masimo cannot demonstrate unpatentability of the design claim based on the evidence set forth in the Petition.

1. Paulke is Not a Proper *Rosen* Reference

The Ground 1 obviousness theory is defective because the Petition fails to demonstrate that Paulke is a proper *Rosen* reference. *See* EX2001, ¶¶46-47. Masimo’s obviousness theory is based on the flawed premise that “any differences between Paulke and the ’842 patent do not change the overall visual similarity of the designs.” Pet., 44. But in making this assumption, Masimo does not address multiple, prominent differences between the claimed design and Paulke, such as

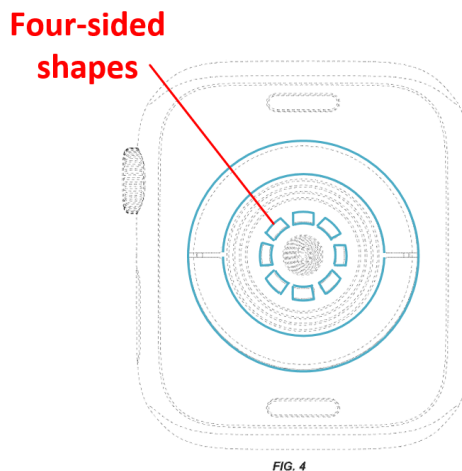
Paulke’s lack of an inner circular shape formed by an arrangement of multiple elongated four-sided shapes. Additionally, Masimo does not address the differences between Paulke’s opposed shapes and the claimed design’s outer circular shape formed by the elongated and spaced-apart arches and the claimed design’s outermost continuous circle and its relationship to the outer circular shape.

Moreover, while Masimo acknowledges that Paulke lacks an “arrangement of rectangles,” Masimo’s theory that Paulke is nonetheless “basically the same” is based on multiple factual and legal errors—Masimo relies on a purported internal “rectangle” that is not depicted by Paulke and never visible together with Paulke’s external components, and a legally erroneous claim construction in which the claimed design purportedly “encompasses *any arrangement* of rectangles surrounded by and spaced apart from the arc-shaped portions.” Pet., 52. The multiple, readily apparent differences between Paulke and the claimed design, and the layers of intermediate modifications proposed in an attempt to reach the claimed design, confirm that the Petition fails to demonstrate Paulke is a “single reference that creates basically the same visual impression.” *Levitation Arts, Inc. v. Flyte LLC*, PGR2018-00073, Paper 14, 16-22 (PTAB, Jan. 17, 2019) (denying institution in part because “claimed design includes ornamental features that are entirely absent or significantly different in the [prior art] design”); *Dorman Products Inc. v. PACCAR Inc.*, IPR2014-00542, Paper 10 at 5 (PTAB Sept. 5, 2014) (denying institution); *In*

re Harvey, 12 F.3d 1061, 1063 (Fed. Cir. 1993) (“Because major modifications would be required to make Harvey’s prior art vase look like the claimed designs, it cannot qualify as a basic design.”).

a) Masimo Fails to Properly Analyze the Inner Circular Shape Formed by the Arrangement of Four-Sided Shapes of the Claimed Design in Comparison to Paulke

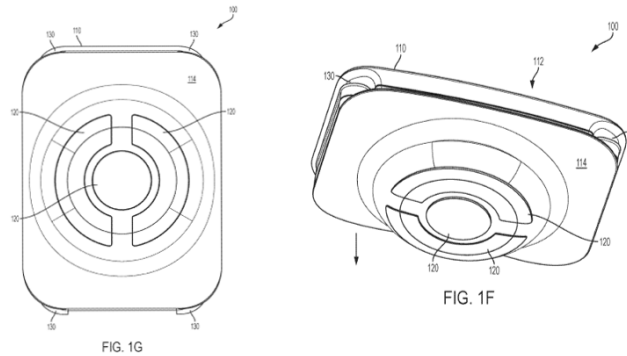
Paulke lacks the claimed design’s concentric circle overall appearance flowing from the inner circular shape formed by the distinctive arrangement of elongated four-sided shapes.



EX2001, ¶¶48-49 (EX1001, Fig. 4 (annotated)).

Paulke depicts a device having a central circular component 120, entirely lacking an inner circular shape formed by an arrangement of multiple, elongated, four-sided shapes. EX1006, Fig. 1G, 1F, 5D. In view of this prominent difference,

the Petition fails to demonstrate that Paulke has an appearance that is “basically the same” as the claimed design. *See* EX2001, ¶¶49-50.



EX1006, Figs. 1G, 1F.

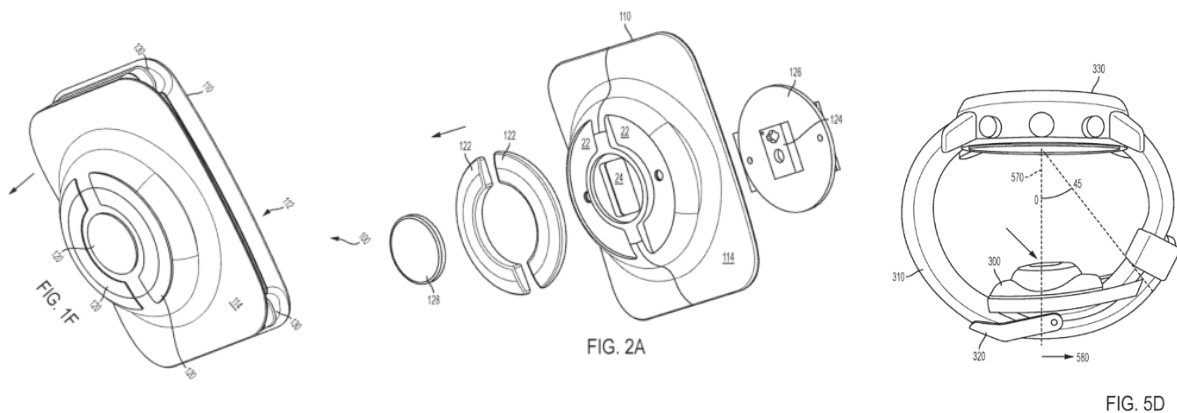
Ground 1 fails to demonstrate a proper *Rosen* reference for this independent reason, and the obviousness inquiry can thus end here.

Beyond this fatal deficiency, Masimo’s Ground 1 obviousness analysis is tainted by multiple additional defects that further confirm that Paulke is not “basically the same” as the claimed design.

For example, in its hindsight attempt to recreate the claimed design, Masimo embarks on a multi-layered analysis that relies on the purported shape of an internal component of Paulke’s device for a purported rectangle. Pet., 52-56. But Paulke never illustrates the purported internal component as a rectangle, and even if it were rectangle, the internal component is *never visible together with* the external components of Paulke. Being an internal component isolated from the external components that Masimo relies on, the purported rectangle does not contribute to a

visual impression of “rectangles surrounded by and spaced apart from the arc-shaped portions” that Masimo improperly asserts (Pet., 52). Paulke simply lacks the combination of an outer circular shape formed by arch shapes together with a rectangle component that is the basis for Masimo’s modification of Paulke. EX2001, ¶¶51-52.

Paulke’s Fig. 2A illustrates an exploded perspective view of the device’s internal components, illustrating that “heart rate and/or blood oxygen sensor 124” is mounted on a “board 126” within the housing beneath a “lens 128.” EX1006, 16.



EX1006, Figs. 1F (rotated), 2A, and 5D.

The Petition alleges that Paulke’s “sensor 124” includes “(1) a light source (e.g., LEDs), (2) at least one light detector (e.g., photodiodes), and (3) an opening to allow light to reach and be detected by the detector,” and “a DOSA would have understood Paulke included a rectangular photodiode (blue) associated with the blood oxygen sensor’s opening.” Pet., 33. But even if an ordinary designer would

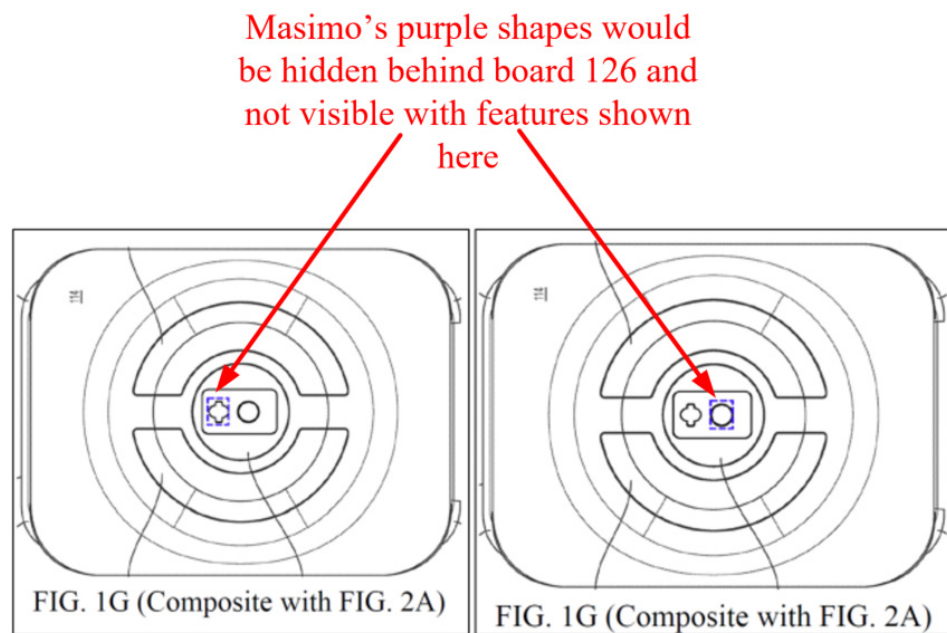
have understood Paulke as including a photodiode having a rectangle shape (which Paulke never mentions and Masimo fails to demonstrate²), Paulke’s appearance is starkly different than the claimed design. EX2001, ¶52.

First, Masimo’s analysis is fatally deficient because Masimo relies on *a single* rectangle shape—a stark contrast from the claimed design’s circular array of four-sided shapes that contributes to the overall appearance of concentric circles. EX2001, ¶57. Masimo’s theory based on a single offset rectangle (even if visible with Paulke’s other features, which it is not) simply creates a different overall appearance that lacks the claimed design’s concentric overall appearance. *Id.* The Petition is silent on this prominent difference, merely concluding “any difference in the arrangement of rectangles does not change the overall visual similarity of the Paulke and claimed designs,” without evidence or explanation. *See*, Pet., 55-56.

Second, Masimo ignores that the purported rectangle is never visible with Paulke’s external features. The purported photodiode, even if present, would have been *hidden behind* Paulke’s depicted openings through sensor 124. EX2001, ¶¶54-

² To be clear, Paulke never mentions the term “photodiode” at all, and certainly not that the photodiode would have a particular appearance alleged by Masimo.

55. Indeed, Masimo itself acknowledges the purpose of Paulke’s depicted openings are “to allow light to reach and be detected by the detector” (Pet., 34), which is an internal component positioned behind Paulke’s openings.



EX2001, ¶53 (Pet., 55 (purple annotations in Pet.; red text/arrows added))

The Petition simply ignores that the purported “rectangular photodiode” is never described or shown by Paulke as visible together with Paulke’s arch portions or other exterior features. *Levitation Arts*, PGR2018-00073, Paper 14 at 21 (denying institution and indicating “Petitioner does not explain how or why ‘hidden’ structures . . . that are not visible in [the prior art] design contribute to the overall visual impression”).

Third, Masimo's theory fails to address the actual appearance depicted by Paulke that depicts *non-rectangular* shapes—a cross-shaped opening and a circle-shaped opening. EX1006, Fig. 2A; EX2001, ¶56. Nothing in Paulke depicts the contrary rectangle shapes Masimo purports to be present, or explains why a DOSA would have understood Paulke to have an appearance of a rectangular shape that deviates from Paulke's illustrated appearance.³ *Berry Sterling Corp. v. Pescor Plastics, Inc.*, 1999 U.S. App. LEXIS 20789, *9 (C.A.F.C. 1999) (“The modifications to the primary reference cannot be such that they change the fundamental characteristics of the design.”); *see also Termax Co. v. Illinois Tool Works Inc.*, IPR2022-00106, Paper 7, 30 (PTAB, May 12, 2022) (citing *Apple, Inc. v. Samsung Elec. Co.*, 678 F.3d 1314, 1331 (Fed. Cir. 2012)).

³ To the extent Masimo relies on modification of Paulke (e.g., to have a rectangle shape visible together with external features, or to modify Paulke's cross or circle shapes to instead have a rectangle shape) before even reaching combination with Mendelson, such a theory is based on legal error and contrary to the *Rosen* analysis that calls for “a single reference, *a something in existence*, the design characteristics of which are basically the same as the claimed design.” *High Point Design*, 730 F.3d at 1311 (emphasis added).

The Petition’s deficiencies with respect to the concentric circular arrangement of four-sided shapes is not remedied by Masimo’s assertion “the claimed design encompasses *any arrangement* of rectangles surrounded by and spaced apart from the arc-shaped portions.” Pet., 52. Masimo’s theory is based on the legal error of improperly “factoring out” this aspect of the claimed design. *Supra*, §IV.B. But the appearance of the circular arrangement of four-sided shapes is significant to the overall appearance of the design and is fundamentally different than Paulke. *Id.*; *see also* EX2001, ¶58.

This deficiency is likewise not remedied by Masimo’s reliance on an isolated quote: “there’s nothing patentable about multiple detectors.” Pet., 56. Tellingly, Masimo omits the quote’s context, which does not speak to the ornamental appearance of an arrangement of detectors, and certainly not the ornamental appearance of the claimed design’s arrangement of four-sided shapes, in combination with other claimed features contributing to the overall concentric circular appearance.

Paulke simply lacks the inner circular shape provided by the arrangement of multiple elongated four-sided shapes of the ’842 patent, and has a markedly different appearance as a result. Paulke is not a proper *Rosen* reference, and Ground 1 fails.

b) Masimo Fails to Properly Analyze the Outer Circular Shape Formed by the Arches of the Claimed Design in Comparison to Paulke

Masimo's assertion that "the arc-shaped portions of Paulke and the '842 Patent provide the same overall visual impression" fails to address readily visible differences that are significant to the claimed design's overall appearance. Pet., 47. The '842 patent includes an outer circular shape formed by unified thin and elongated arches. *Supra*, §IV.A. The ends of each arch are positioned to form the unified circular appearance. EX2001, ¶¶20-27, 60-61. As discussed above, the thickness of the arches from the arch's inner edge to the outermost continuous circle is relatively small, contributing to the appearance of an elegant and streamlined outer circular shape. *Id.*

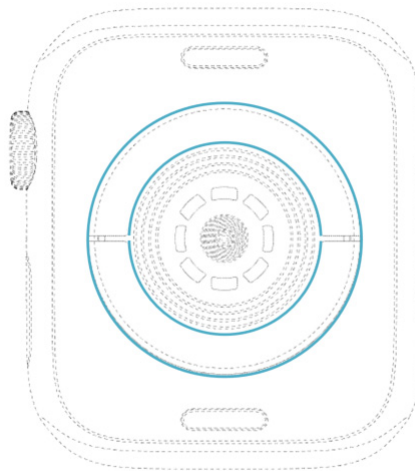


FIG. 4

EX2001, ¶61 (EX1001, Fig. 4 (annotated)).

In contrast to the '842 patent's design, Paulke depicts opposed shapes spaced apart from one another and having a relatively larger thickness. Paulke's features provide an appearance of two separate, opposed shapes that differs prominently from the '842 patent's arches that evoke an overall concentric circle appearance. EX2001, ¶62.

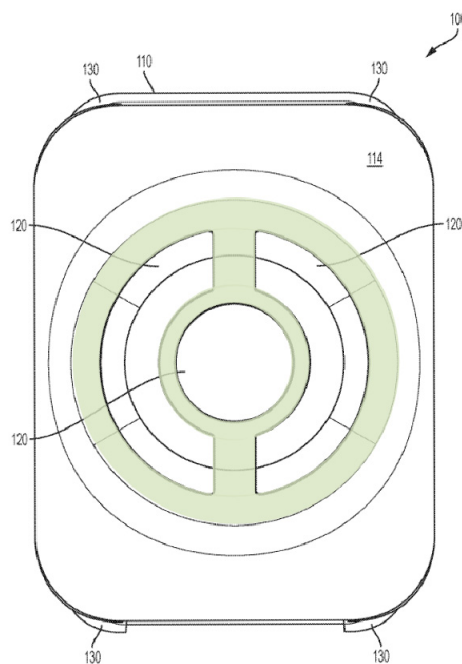


FIG. 1G

EX2001, ¶¶62-63 (EX1006, Fig. 1G (highlighted)).

As discussed above, Paulke's opposed shapes are meaningfully wider than the '842 patent's claimed arches, with the inner edge of Paulke's opposed shapes are spaced a substantial distance inwardly (e.g., relative to radius lines depicted in Fig. 1G), and the width of Paulke's curved shapes extend across a significant portion of Paulke's sensor body surface. These prominently visible features provide a different

overall appearance that is bulky and dominated by the opposed curved shapes, providing a crowded appearance rather than the '842 patent's streamlined, elegant concentric circle appearance. Masimo ignores this aspect of the claimed design, and its contribution to the overall appearance.

Masimo acknowledges "Paulke's arc-shaped portions are spaced slightly farther apart than the claimed design" but merely concludes "that difference, or any difference in the size, shape or spacing of the arc-shaped portions of Paulke and the claimed design, does not alter the overall visual similarity of these designs." Pet., 48. Here again, Masimo never addresses the contribution of these features on the claimed design's overall appearance, ignoring the visual appearance of the claimed design's concentric circles that is lacking from Paulke's opposed "arc-shaped" components. This is not a matter of degree—Paulke's opposed shapes have the appearance of two separate features rather than the '842 patent's unified circular appearance of the arches. EX2001, ¶¶63-65.

The Petition cites paragraphs 60-61 of the Delman Declaration, but these paragraphs parrot the petition without any additional underlying explanation. *Compare* EX1003, 60-61 *with* Pet., 47-50. Such an "*ipse dixit* declaration" is insufficient and does nothing to remedy the Petition's deficient analysis. *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1362-64 (Fed. Cir. 2019) (refusing to give weight to petitioner's "*ipse dixit* declaration").

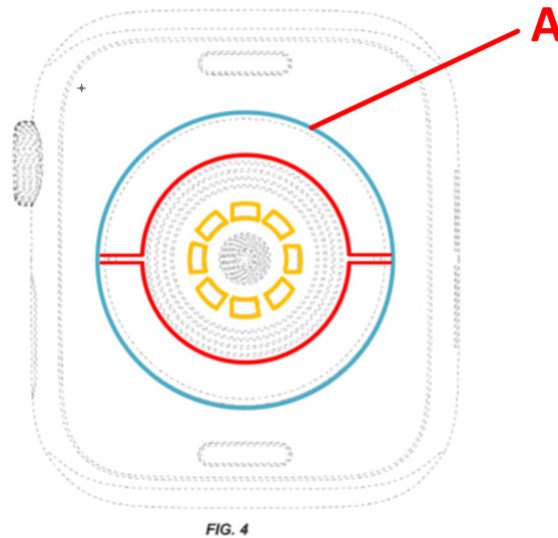
Here again, Masimo's analysis is fatally deficient, ignoring meaningful features of the claimed design that differ in comparison to Paulke. These differences highlight Paulke's failure to provide an appearance that is "basically the same" as the claimed design, and Paulke is not a proper *Rosen* reference for at least this additional reason.

c) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches of the Claimed Design in Comparison to Paulke

The Petition fails to address the claimed design's outermost continuous circle, and its contribution to the overall appearance, in its Ground 1 analysis. *See*, Pet., Ground 1. Masimo further fails to address the differences between Paulke's design and the claimed design's relationship between the outermost continuous circle and outer circular shape formed by the spaced-apart elongated arch shapes.

The outermost continuous circle encompasses each of the other features of the claimed design and sets the tone of its concentric circular overall impression. EX2001, ¶¶66-67. For example, the claimed design's outermost continuous circle (annotated "A" below) surrounds the outer circular shape formed by the arches and the inner circular shape formed by the four-sided shapes. It encompasses the other features of the claimed design and provides a visual continuity that is mimicked by the assemblies of shapes arranged within the outermost continuous circle. The outermost continuous circle thus meaningfully contributes to the claimed design's

appearance as a series of concentric circles evoking a target, bulls-eye or ripples in a pond. EX2001, ¶67.



EX2001, ¶¶66-67 (EX1001, Fig. 4 (annotated)).

Masimo fails to address this aspect of the claimed design in its Ground 1 analysis. The Petition's annotations of Paulke ignore this aspect, which do not depict such an outermost continuous circle near its opposed shapes. EX2001, ¶¶68-69.

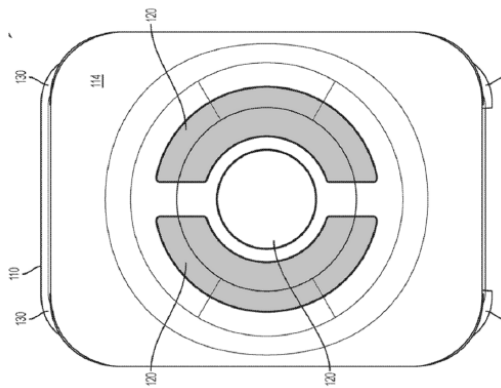


FIG. 1G (rotated)

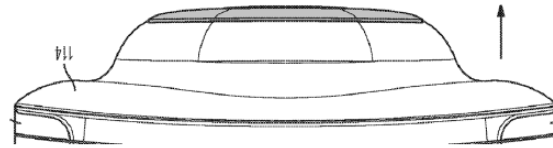
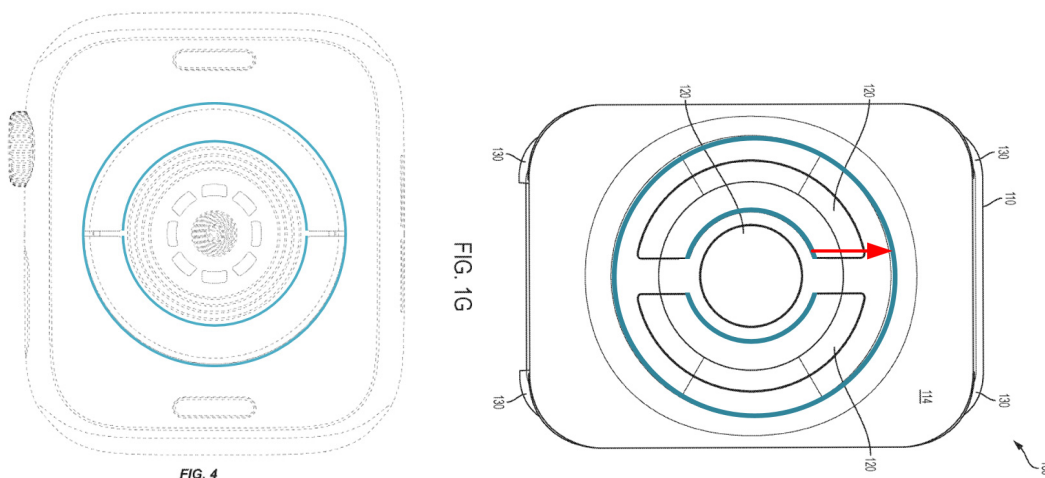


FIG. 1D (rotated)

Pet., 48, 51 (EX1006, FIGS. 1G, 1D).

Moreover, Masimo ignores the specific appearance provided by the relationship between the outermost continuous circle and the inner and outer circular shapes provided by the arches and multiple four-sided shapes, respectively. For example, by ignoring the outermost continuous circle altogether, Masimo fails to address the overall impression of a series of continuous and concentric circles of decreasing size, that provides a target or bulls-eye appearance. Additionally, Masimo neglects to address the position of the outermost continuous circle relative to the inner edge of the outer circular shape formed by the arch-shapes, and further relative to the outer edge of the inner circular shape formed by the four-sided shapes. Each of these is spaced from the other to highlight the elegant circles of decreasing size.

Masimo further fails to address the relationship between the arch shapes and the size of the outermost continuous circle in the '842 patent, which depicts a readily apparent thickness of the arches that is relatively small compared to the diameter of the circle traced by the outermost continuous circle. EX2001, ¶¶70-71. The small thickness of the outer circular shape relative to the diameter of the outermost continuous circle contributes to the claimed design's overall appearance as an elegant and streamlined series of concentric circles, rather than a bulky assembly of shapes.

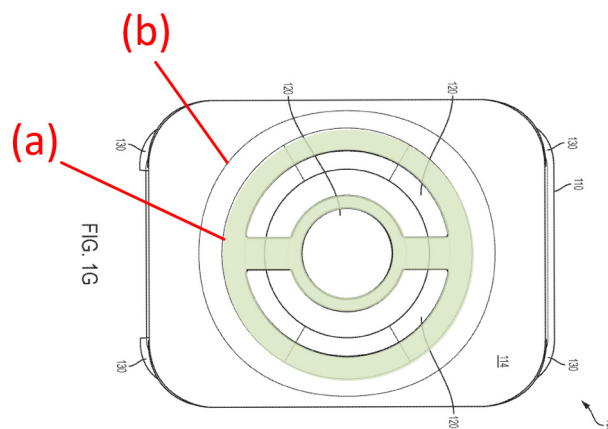


EX2001, ¶¶70-71 (Left: EX2001, Fig. 4 (annotated); Right: EX1004, Fig. 1G (rotated, annotated)).

Masimo ignores this aspect of the claimed design and its contribution to the overall appearance. In contrast to the claimed design, Paulke's opposed shapes have a much thicker appearance. EX2001, ¶72. Paulke's opposed shapes are bulky and take up a significant amount of space in Paulke's design, contributing to a crowded

appearance (e.g., between the opposed shapes) rather than the '842 patent's streamlined appearance. *Id.*

Indeed, the Petition does not specifically identify an outermost continuous circle in Paulke at all – the lines in Paulke appear to depict radius lines showing changes in slope of the edges of a raised portion, and at least in the case of the outermost line, are oval rather than circular in shape. To the extent Masimo relies on radius lines in Paulke's drawing (which the Petition never mentions), Paulke's opposed shapes are spaced inwardly significantly from both the intermediate (a) and outer (b) lines, here again conveying a different overall appearance that lacks the claimed design's streamlined, well-proportioned appearance. Moreover, Paulke's outer line is not a circle at all, instead slightly depressed inwardly such that it has an elliptical or oval shape. EX2001, ¶¶72-73; EX1006, FIGS. 1D and 1G.



EX2001, ¶72 (EX1004, Fig. 1G (rotated, annotations and highlighting added)).

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Modify Paulke in View of Mendelson To Create the Claimed Design

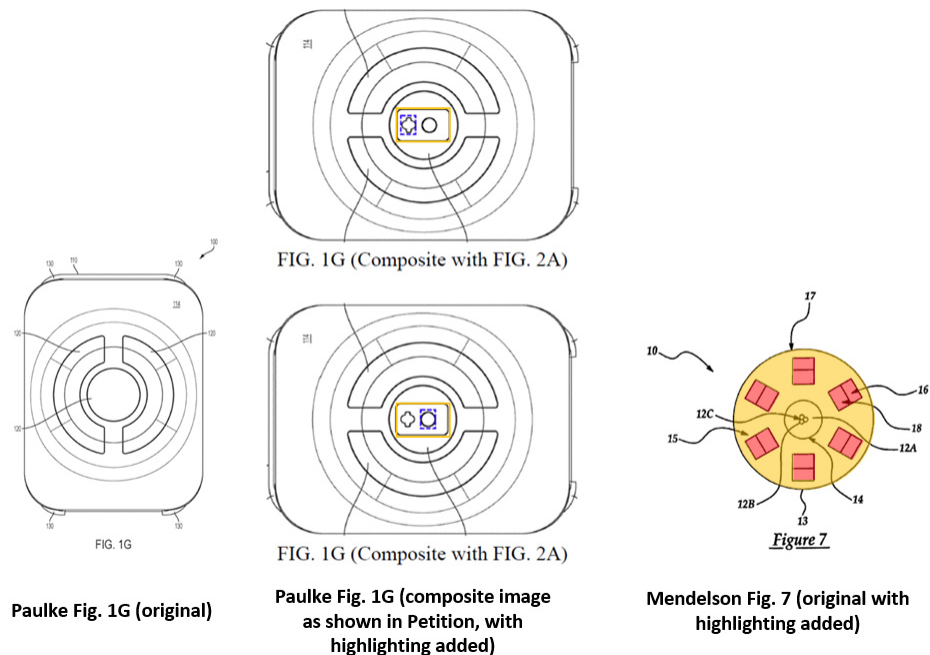
a) Mendelson is Not a Proper Secondary Reference for Combination with Paulke

The Petition’s focus on Paulke and Mendelson as providing a sensor fails to demonstrate that Mendelson’s design is “so related” to Paulke in *appearance* that Mendelson is a proper secondary reference. EX2001, ¶¶74-75. A secondary reference may only be used to modify the primary reference if the secondary reference is “so related that the appearance of certain ornamental features in one would suggest the application of those features to the other.” *In re Glavas*, 230 F.2d 447, 450 (C.C.P.A. 1956). “The question in design cases is not whether the references sought to be combined are in analogous arts in the mechanical sense,” but rather whether the appearance of the references is “so related” that the “appearance of certain ornamental features in one would suggest application of those features to the other.” *Id.*; see also *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than ornamental appearance).

Masimo relies on Paulke’s central circular biosensor 120 and Mendelson’s circularly-shaped sensor as evidence that Mendelson is “so related” to Paulke’s design. Pet., 57-58 (“Mendelson is so related to Paulke *because it discloses a suitable sensor* for Paulke’s design” and “Paulke suggests replacing its central circular biosensor with a suitable oxygen saturation sensor.”). In doing so, Masimo

improperly focuses on Mendelson’s *use* as a sensor rather than the visual *appearance* of Mendelson and Paulke. *In re Sung Nam Cho*, 813 F.2d 378, 382 (Fed. Cir. 1987) (reversing Board’s obviousness determination that analyzed design patent “as if it were the subject of an application for a utility patent”) (“[a]lthough it may have been obvious, from a utility stand point, to place cylindrical depressions in crown type caps and to include flaps in the depressions, it does not follow that Cho’s design was obvious”); *Termax*, IPR2022-00106, Paper 7 at 29.

When properly focusing on appearance instead of use, Mendelson and Paulke have little in common. In contrast to Mendelson’s arrangement of pairs of rectangles, Paulke altogether lacks the rectangular shape relied on by the Petition in visual combination with the claimed design’s external features. Likewise, Mendelson lacks any relationship between its pairs of rectangles and surrounding opposed arc shapes—no such features are present in Mendelson.



EX2001, ¶¶75-76 (EX1006 Fig. 1G; Pet., 55 (EX1006, Fig. 1G); EX1011, Fig. 7 (annotated)).

Paulke’s appearance is significantly different from Mendelson’s appearance with an arrangement of pairs of rectangles aligned in lines bisecting a central circular shape. In view of the differences between Paulke and Mendelson, the references are not “so related that the appearance of certain ornamental features in one would suggest the application of those features to the other.” *Glavas*, 230 F.2d at 450.

To be clear, Masimo’s reliance on the presence of a “circular biosensor” in Paulke and “circular shape” in Mendelson is alone insufficient to demonstrate Paulke and Mendelson are “so related” as to suggest application of Mendelson’s arrangement of rectangle shapes into Paulke in view of the remainder of the respective designs. Paulke describes a circular shape with a single elongate shape

centered therein, and two non-symmetrical offset apertures of different, non-rectangular shapes (a cross shape and a circle shape). In contrast, Mendelson describes an outer circular shape surrounding a radially symmetrical array of rectangles aligned in lines bisecting a central circle. EX2001, ¶¶75-78. The mere presence of a circle is insufficient to suggest application of Mendelson’s array of rectangles to Paulke, except for improper use of the claimed design as a roadmap. *Premier Gem*, IPR2016-00434, Paper 9 at 16; *L.A. Gear, Inc. v. Thom McAn Shoe Co.*, 988 F.2d 1117, 1124 (Fed. Cir. 1993) (“Not only the individual elements, but the ornamental quality of the combination must be suggested in the prior art. . . . A reconstruction of known elements does not invalidate a design patent, absent some basis whereby a designer of ordinary skill would be led to create this particular design.” (emphasis added)).

This hindsight reasoning employed by Masimo becomes even more egregious as additional modifications to the Paulke/Mendelson combination are layered on beyond the depictions of Paulke and Mendelson.

b) Masimo’s Proposed Series of Modifications Beyond the Design Depicted in Mendelson are Improper

Masimo acknowledges multiple additional modifications are necessary to provide features of the ’842 patent beyond that depicted by Paulke or Mendelson, tacitly acknowledging that modifying Paulke to use “Mendelson’s arrangement of

rectangular photodiodes” fails to achieve the claimed design. Pet., 59-64. But these additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶¶79-82. The proposed modification fails for this additional reason.

For example, Masimo’s assertion that “the difference between the claimed photodiode shapes (curved rectangles) and those in Mendelson (straight rectangles 16/18) was a change known in the art,” fails to demonstrate that such a change would have been considered trivial by a DOSA, and that a DOSA would have further modified the proposed Paulke/Mendelson combination to achieve the claimed design’s specific appearance. First, the Petition fails to provide any prior art evidence of “curved rectangles” having the specific appearance proposed by the Petition. The Petition does not rely on Paulke or Mendelson for this modification, neither of which depict such a feature.

Second, even if “curved rectangles” was a “change known in the art” (which Masimo fails to demonstrate with prior art evidence), the Federal Circuit has made clear that mere knowledge of a shape is insufficient:

If we adopted the logic of the Board and concluded that the substitution of the Carder shapes for those in the Harvey prior art case would render the ’904 and ’906 design applications obvious ***just because the Carder shapes were well-known and frequently used in vase designs***, each and every prior art bowl or vase shape ever publicly disclosed would render obvious any generally similar vase shape. Clearly, ***this cannot be the case***.

Harvey, 12 F.3d at 1065 (emphasis added). It is not enough that curved rectangles for particular sensor features were known (which Masimo fails to demonstrate). The prior art's appearance must suggest modifying the references in the specific proposed manner. *Id.*

Third, Masimo's assertions that a DOSA would have created curved edges "to visually parallel the corresponding curvatures of Paulke's . . . arc-shaped portions and the sensor's overall circular shape and" to "provide a visually consistent, simplistic, and appealing look of concentric circles" ignores that Mendelson already includes an outer circle shape yet utilizes rectangle shapes *without* curved edges. *Pet.*, 63. In other words, the purported reason for modifying Mendelson's rectangles to have curved edges—to complement curved lines of Paulke—ignores that Mendelson already includes a curved outer shape in combination with straight edges. Mendelson itself undermines Masimo's proffered reasons for this modification. Masimo failed to demonstrate a DOSA would have considered such a modification to the detriment of Paulke and Mendelson's original designs. *See Termax*, IPR2022-00106, Paper 7 at 30 ("the notably consistent symmetrical nature of both designs would not suggest that a skilled designer would destroy that symmetry by using a rounded platform with a rectangular platform." (citing *Apple*, 678 F.3d at 1331)). Masimo's proposed modification and motivation to do so is unsupported and fatally deficient.

The deficiencies discussed above are not remedied by Masimo’s reliance on purported utility motivations. The teachings of references can properly be combined in a design patent context if they are so related that the *appearance* of certain ornamental features in one reference would have *suggested application of those features to another*. *In re Rosen*, 673 F.2d 388, 213 U.S.P.Q. (BNA) 347 (CCPA 1982). Simply stated, when determining obviousness of a design patent claim, “the focus must be on appearances and not uses.” *See Harvey*, 12 F.3d at 1064 (reversing Board’s obviousness determination where “the Board improperly mixed principles of obviousness for utility patents with those for ornamental design patents.”); *In re Sung Nam Cho*, 813 F.2d at 382 (reversing Board’s obviousness determination that analyzed design patent “as if it were the subject of an application for a utility patent”); *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than ornamental appearance, and indicating “the Federal Circuit has made clear that the motivation to modify one design with another is limited to whether the articles are ‘so related’ (*i.e., so similar in appearance*)”).

Masimo ignores this well-established principle of design patent law, embarking on a multi-layered series of modifications based on purported utility considerations. Pet., 57-63. Masimo’s analysis does nothing to address the requisite standard of whether the appearance of certain ornamental features in one reference

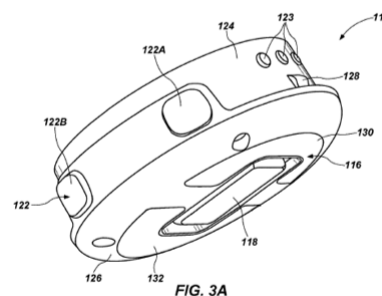
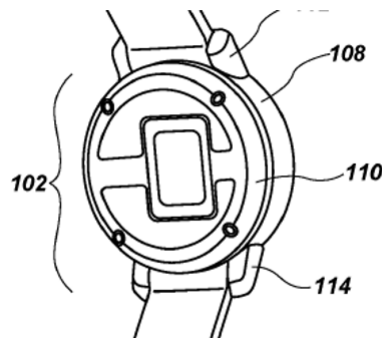
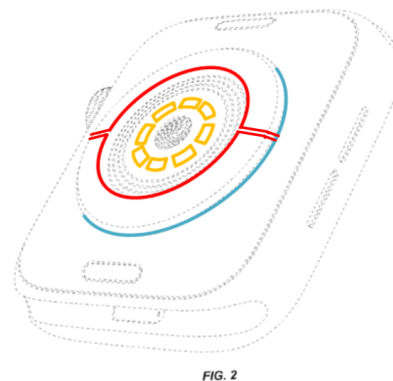
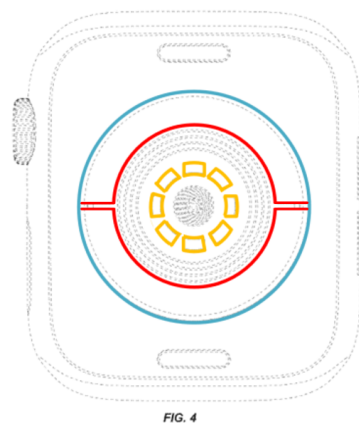
would have suggested application of those features to another and does not address the claimed design’s specific ornamental contributions.

Masimo’s assertion that “rather than use both of Mendelson’s six-photodiode arrays with Paulke as shown above, a DOSA alternatively would have been motivated to use one array, as shown below,” is unsupported by any aspect related to the appearance of the photodiode array. Pet., 62. This deficiency is not remedied by Masimo’s purported motivation to “improve the performance of the PPG,” which is contrary to Mendelson’s explicit teachings of utilizing “far” and “near” detectors. *Id.*; *see also* EX1011, 9:26-34, 13:19-22. Moreover, even presuming a DOSA would have been motivated to make the device “cheaper and easier” (which Masimo fails to demonstrate), Masimo fails to demonstrate such a motivation would have led to the particular ornamental appearance that it proposes. *See Termax*, IPR2022-00106, Paper 7 at 29.

Additionally, Masimo’s removal of an entire array is at odds with Masimo’s claimed motivation of “using more photodiodes [to] improve[] the sensor’s signal-to-noise ratio, and thus its accuracy.” Pet., 63. Masimo’s multiple modifications beyond the Mendelson designs—and the tortured logic required to support such modifications—is improper. Masimo’s obviousness analysis in Ground 1 is fatally deficient for at least these reasons.

D. Ground 2: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Yuen in View of Mendelson and Bushnell

Ground 2 is fatally flawed because the Petition simply fails to demonstrate that Yuen is a proper *Rosen* reference. While the inner circular shape formed by multiple four-sided shapes is central to the concentric circle overall appearance of the claimed design, any similar aspect is entirely lacking from Yuen.



EX2001, ¶¶83-84 (Top: EX1001, Figs. 2 and 4 (annotated)); Bottom: EX1007, Figs. 1B (excerpted) and 3A).

Yuen entirely lacks the appearance of concentric rings suggesting a bulls-eye or ripples in a pond. Given this prominent difference, Masimo fails to satisfy its

burden to demonstrate that Yuen has an appearance that is “basically the same” as the claimed design, and the obviousness analysis can end here. *See, e.g., Vitro Packaging*, IPR2015-00947, Paper 13 (“we need not reach the second step of the obviousness analysis”).

Beyond failing to demonstrate Yuen is a proper *Rosen* reference, the Petition relies on layers of modifications that significantly change Yuen’s appearance, and that are not depicted by (or even suggested by) Yuen, Mendelson or Bushnell, in an attempt to recreate the claimed design. The gaps in the Petition’s analysis highlight that Masimo cannot demonstrate unpatentability of the design claim based on the evidence set forth in the Petition.

1. Yuen is Not a Proper *Rosen* Reference

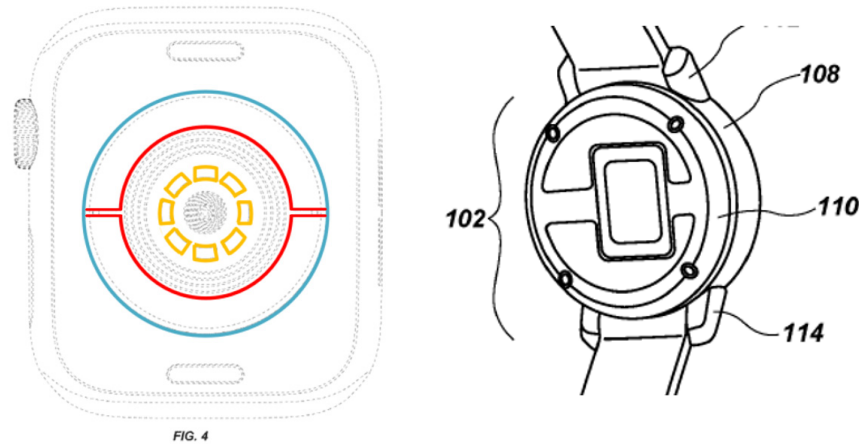
Masimo’s obviousness theory is based on the flawed premise that “any differences between Yuen and the ’842 patent do not change the designs’ overall visual similarity.” Pet., 67. But in making this assumption, Masimo fails to address the vastly different overall appearance provided by Yuen in comparison to the claimed design. *See* EX2001, ¶85. Yuen entirely lacks an inner circular shape formed by an arrangement of multiple elongated four-sided shapes, and the contribution of such features to the claimed design’s concentric circle overall appearance. Additionally, Masimo does not address the differences between Yuen’s asymmetric and squarish opposed shapes that provide a markedly different overall

appearance from the '842 patent's outer circular shape. Moreover, the Petition fails to address additional prominent differences between the claimed design and Yuen, such as the relationship between the claimed design's outer circular shape formed by the arrangement of elongated arch shapes within an outermost continuous circle, that together with the inner circular shape provide a concentric circular appearance. These differences between Yuen and the claimed design result in an overall appearance that is asymmetrical and bulky as opposed to the claimed design's appearance of sleek and balanced concentric circles. Each of these differences are enough to independently disqualify Yuen as a proper *Rosen* reference because of the significantly different overall appearance that results from these features. *See Levitation Arts*, PGR2018-00073, Paper 14 at 16-22; *Dorman Products*, IPR2014-00542, Paper 10 at 5; *In re Harvey*, 12 F.3d at 1063.

a) Masimo Fails to Properly Analyze the Inner Circular Shape Formed by the Arrangement of Four-Sided Shapes of the Claimed Design in Comparison to Yuen

Yuen lacks the claimed design's distinctive inner circular shape formed by an arrangement of four-sided shapes, and the claimed design's resulting concentric circle overall appearance. Masimo does not identify an inner circular shape or even a single four-sided shape arranged to form such an inner circular shape in Yuen's design. Indeed, Yuen's design completely omits any inner circular shape formed by

elongated four-sided shapes and lacks any impression of concentric circles provided by the '842 patent. *See* EX2001, ¶¶86-87



EX2001, ¶87 (EX1001, Fig. 4 (annotated)); EX1007, Figs. 1B (excerpted)).

In view of these prominent differences, the Petition fails to demonstrate that Yuen has an appearance that is “basically the same” as the claimed design. Ground 2 lacks a proper *Rosen* reference for this independent reason.

Yuen depicts a rear face of a device having an offset sensor component that Yuen identifies as “photoplethysmography sensor 118.” EX1007, Fig. 1B; [0032]; *see also* [0041] (“PPG sensor 118”); Pet., 72. Yuen describes that “PPG sensor 118 may include any PPG sensor 118 known in the art” (EX1007, [0041]). From this terse description, Masimo extrapolates “a DOSA would have understood Yuen’s PPG sensor included at least one rectangular photodiode.” Pet., 73. But nothing in Yuen specifically mentions a photodiode, much less a photodiode having the specific shape that Masimo annotates in Fig. 4 below.

Masimo relies on
appearance of added
rectangle that is not shown
or described by Yuen

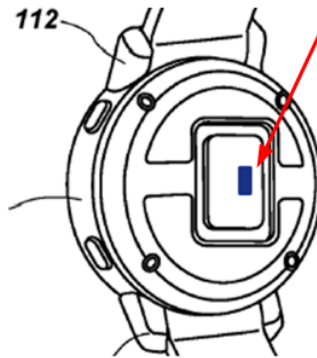


FIG. 4 (Composite)

EX2001, ¶¶90-91 (Pet., 73 (blue rectangle added by Petition to EX1007, Fig. 4, red arrow and text added)).⁴

Even if an ordinary designer would have understood Yuen as including a photodiode having a rectangle shape (which Yuen never mentions and Masimo fails to demonstrate), Masimo’s analysis is fatally deficient because Masimo relies on the appearance of *a single offset rectangle*. Here again, Masimo ignores that a single offset rectangle has a different appearance that lacks the claimed design’s concentric circular arrangement of four-sided shapes that forms an inner circular shape and contributes to the overall concentric circular appearance. EX2001, ¶¶88-91. The

⁴ Masimo describes its figure as a “composite” but does not specify what Yuen’s image is composited with to produce the image.

Petition is silent on this prominent difference, merely concluding that though “Yuen differs from the claimed design because Yuen only includes the one rectangle shown above... Yuen remains an appropriate primary reference...because it discloses basically the same visual impression as the claimed design,” without evidence or explanation. *See*, Pet., 73-74. This is insufficient to meet its burden.

Additionally, Masimo ignores that the purported “rectangular photodiode” is not visible together with Yuen’s external features. If present at all, Masimo ignores that it would be an internal component isolated from any aesthetic appearance of the external components. *See Levitation Arts*, PGR2018-00073, Paper 14 at 21. To the extent Masimo relies on modification of Yuen (e.g., to have a rectangle shape visible together with external features) before even reaching combination with secondary references, such a theory is based on legal error and contrary to the *Rosen* analysis that calls for “a single reference, a something in existence, the design characteristics of which are basically the same as the claimed design.” *High Point Design*, 730 F.3d at 1311.

The Petition’s deficiencies with respect to the concentric inner circular shape provided by the arrangement of elongated four-sided shapes are not remedied by Masimo’s assertion that “the claimed design encompasses *any arrangement* of rectangles surrounded by and spaced apart from the arc-shaped portions.” Pet., 52; *see also* Pet., 72. Masimo’s theory is based on the legal error of improperly

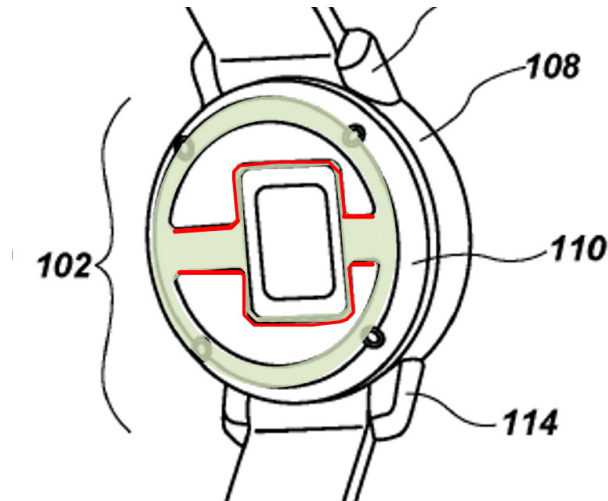
“factoring out” this aspect of the claimed design. *Supra*, §IV.B. The appearance of the circular arrangement of four-sided shapes is significant to the overall appearance of concentric circles provided by the claimed design and is fundamentally different than Yuen. *Id.*

Yuen’s complete omission of the ’842 patent’s inner circular shape provided by the arrangement of multiple elongated four-sided shapes highlights that Yuen has a different appearance and is not a proper *Rosen* reference. Accordingly, Ground 2 fails. EX2001, ¶¶92-93.

b) Masimo Fails to Properly Analyze the Outer Circular Shape Formed by the Arches of the Claimed Design in Comparison to Yuen

In contrast to the ’842 patent’s design, Yuen depicts asymmetrical, squarish shapes that are spaced apart from one another in an opposed relationship. These features provide an immediately apparent overall appearance different from the claimed design’s appearance of concentric circles resulting from the outer circular shape provided by the arches. EX2001, ¶94.

Yuen’s opposed shapes are *asymmetrical*. For example, the left side of the shapes is notably wider than the right side of the shapes (e.g., as shown in FIG. 1B).

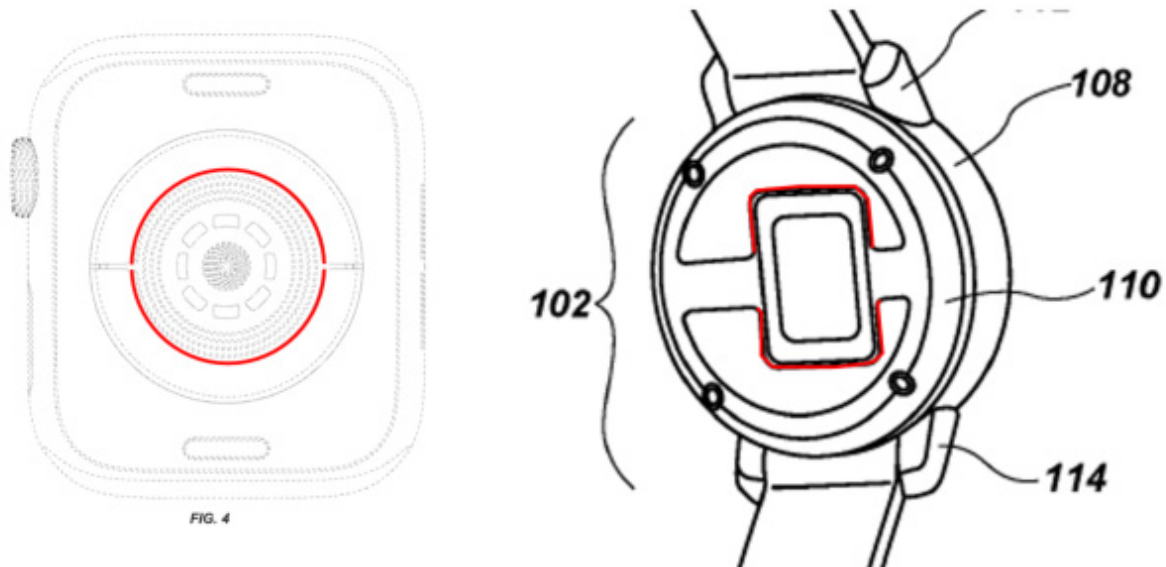


EX2001, ¶95 (EX1007, Fig. 1B (excerpted, annotated)).

The asymmetric appearance is not just a result of the perspective shown in Fig. 1B—Masimo admits elsewhere in the Petition that Yuen’s shapes are asymmetric. *See*, Pet., 79 (“Yuen’s asymmetrically located PPG sensor”). EX2001, ¶¶95-96.

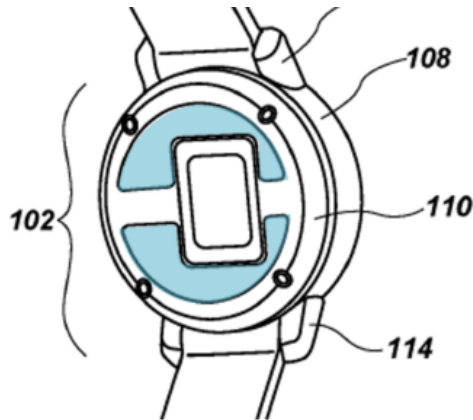
Additionally, Yuen’s opposed shapes are not arch-shaped but instead have a square, off-center cut-out. The inner edge of the opposed shapes are not curved or

circular at all, and certainly do not evoke an appearance of concentric circles.



EX2001, ¶97 (Left: EX1001, Fig. 4 (annotated); EX1007, Fig. 1B (excerpted, annotated)).

As yet a further prominent difference, Yuen's features provide an appearance of two separate, opposed shapes. EX2001, ¶98. Yuen's shapes are meaningfully wider than the claimed design's elongated thin arch elements, and the ends of Yuen's shapes are separated by a relatively large gap. These prominently visible features provide a different overall appearance that is bulky and dominated by the opposed shapes, providing a crowded overall appearance rather than the '842 patent's streamlined, elegant concentric circle appearance. Masimo ignores these aspects of the claimed design, and the differing appearance of Yuen's shapes.



EX2001, ¶98 (EX1007, Fig. 1B (excerpted, annotated)).

The above deficiencies are not remedied by Masimo’s acknowledgement that “Yuen’s arc-shaped portions have a slightly different shape and spacing than in the claimed design.” Pet., 69-70. Masimo merely concludes “that difference, or any difference in the size, shape, or spacing of the arc-shaped portions of Yuen and the claimed design, does not alter the overall visual similarity of these designs,” without following this assertion with any analysis of these differences or why they purportedly do not alter the overall visual appearance. *Id.* Here again, Masimo never addresses the contribution of these prominent features to the claimed design’s overall appearance, ignoring the visual appearance of the claimed design’s concentric circles that is lacking from Yuen’s squarish shapes. To be clear, these differences are not a mere matter of degree—Yuen’s opposed shapes are asymmetric and squarish, immediately contrasting with the ’842 patent’s arches and its overall appearance of concentric circles. EX2001, ¶99.

These differences highlight Yuen has a different appearance that is not “basically the same” as the claimed design. Yuen is not a proper *Rosen* reference for these additional reasons.

c) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches of the Claimed Design in Comparison to Yuen

Masimo’s obviousness theory ignores the different overall appearance flowing from the claimed design’s outermost continuous circle, and the relationship between the outermost continuous circle and the outer circular shape provided by the spaced-apart elongated arches formed within the outermost continuous circle. *Supra*, §IV.A As described above, the outermost continuous circle encompasses the other features of the claimed design and sets the tone of the concentric circular overall impression. *See supra* §IV.A; EX2001, ¶¶20-27.

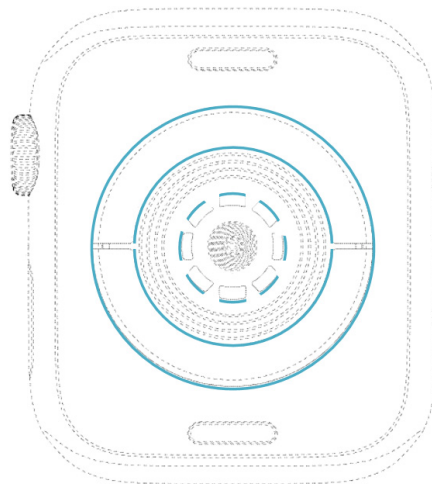
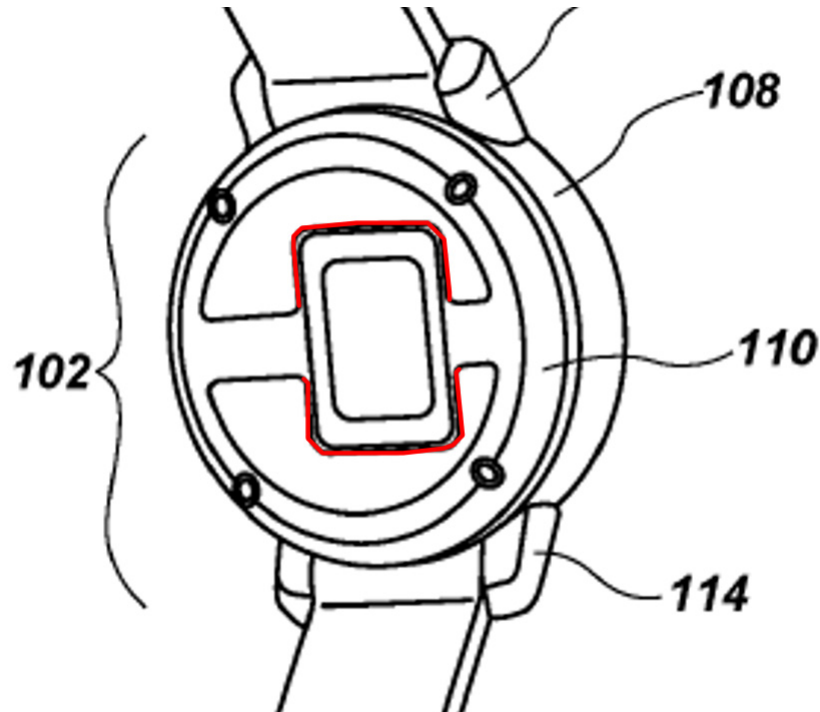


FIG. 4

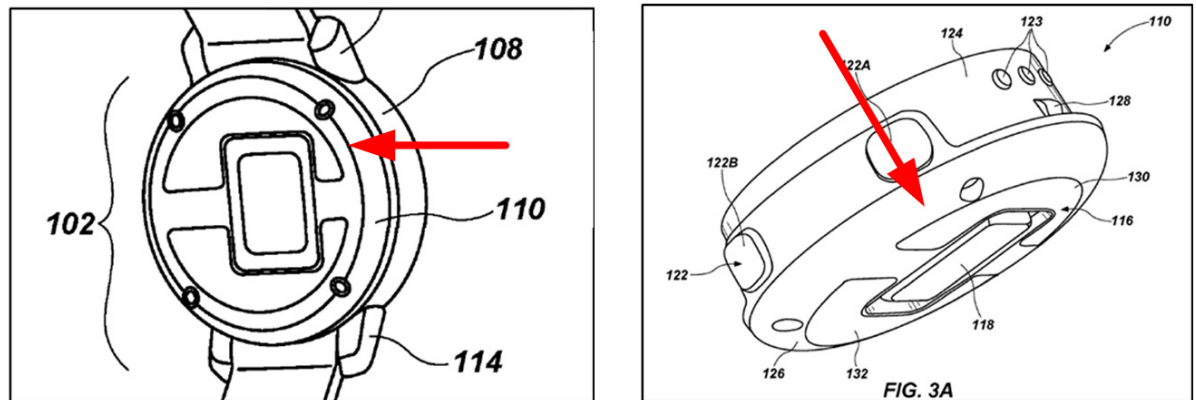
EX2001, ¶100 (EX1001, Fig. 4).

The Petition's analysis of Ground 2 is silent as to this outermost continuous circle shape and its contribution to the claimed design's overall appearance, and Masimo fails to address the outermost continuous circle in its comparison to Yuen. The Petition ignores that Yuen lacks the outermost continuous circle altogether, instead depicting a line showing the change in slope of the raised element and the watchface's back, and as a result, Yuen also lacks the overall impression of a series of continuous and concentric circles of decreasing size, suggesting a target or bulls-eye. Additionally, Masimo neglects to address the position of the outermost continuous circle relative to the inner edges of the arches, and further relative to the outer edges of the inner circular shape formed by the four-sided shapes. While the claimed design's outermost continuous circle and inner edge of the arches are spaced to provide a streamlined, elegant appearance of circles of decreasing size, Yuen depicts thick, squarish, opposed shapes that entirely lack a ring-like appearance.



EX2001, ¶101 (EX1007, Fig. 4 (excerpted, annotated to highlight squarish inner edge of opposed shapes)).

Masimo also fails to address the claimed design's relationship between the outer circular shape formed by the arches and the size of the outermost continuous circle (e.g., the "thickness" of the arches). *See supra* §IV.A; EX2001, ¶¶100-102. The small thickness relative to the diameter of the outermost continuous circle contributes to the claimed design's overall appearance as an elegant series of concentric circles, rather than a bulky assembly of shapes having a thicker and imprecise appearance.



EX2001, ¶103 (EX1007, Figs. 1B and 3A (excerpted, annotated)).

To the extent Masimo relies on the line delineating the back face of the watch in Fig. 1B (which the Petition never mentions), Yuen’s Fig. 3A confirms that this line merely represents curvature of the watch’s rear surface. Additionally, Yuen’s opposed shapes are spaced inwardly significantly from this line, here again conveying a different overall appearance that lacks the claimed design’s streamlined, well-proportioned appearance. EX2001, ¶103.

Because the Petition has failed to provide any explanation that accounts for these visible differences, Masimo has not demonstrated that Yuen is “a single reference that creates basically the same visual impression” as the claimed design. *High Point Design*, 730 F.3d at 1314; *Harvey*, 12 F.3d at 1063.

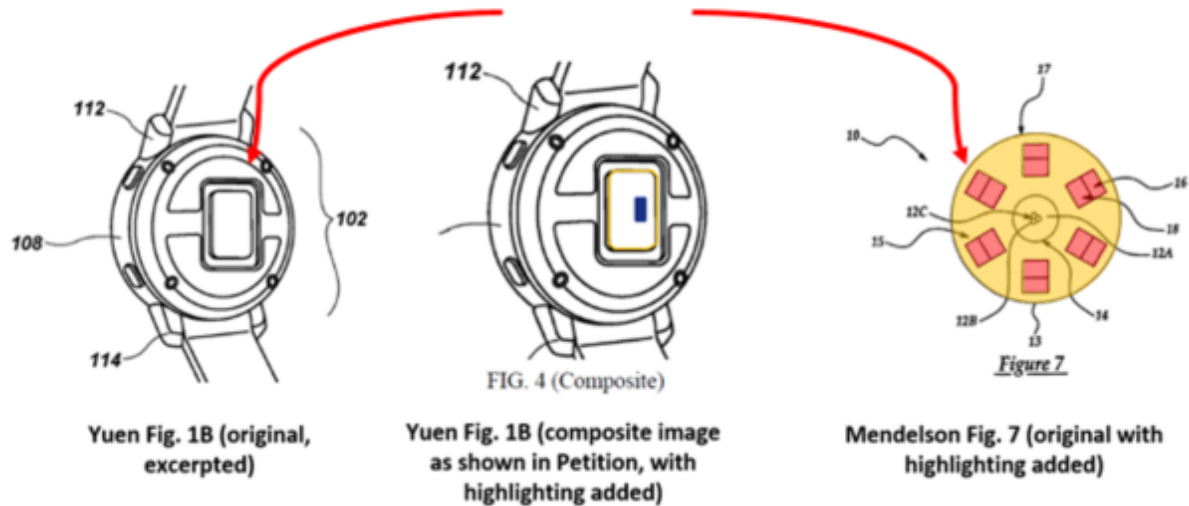
2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Yuen in View of Mendelson and Bushnell To Create the Claimed Design

a) Mendelson is Not a Proper Secondary Reference for Combination with Yuen

The Petition fails to demonstrate that Mendelson’s sensor design is “so related” to Yuen that “the appearance” of certain ornamental features in Mendelson would suggest the application of those features to Yuen. *Glavas*, 230 F.2d at 450.

Masimo relies on Yuen’s description that its device can include “any PPG sensor 118 known in the art” and Mendelson’s sensor as evidence that Mendelson is “so related” to Yuen’s design. Pet., 75 (“Mendelson is so related to Yuen because it discloses a suitable sensor for Yuen [sic] design”). In doing so, Masimo improperly focuses on Mendelson’s use as a sensor rather than the visual appearances of Mendelson and Yuen, which have virtually no overlap in appearance. *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than ornamental appearance, and indicating “the Federal Circuit has made clear that the motivation to modify one design with another is limited to whether the articles are ‘so related’ (*i.e., so similar in appearance*)”). In contrast to Mendelson’s arrangement of pairs of rectangles, Yuen lacks any corresponding rectangular shape whatsoever. EX2001, ¶¶104-105. Likewise, while Mendelson has a circular perimeter shape and radially-symmetric rectangle arrangement, Yuen has a squarish arrangement between opposed, asymmetric shapes. *Id.*

Yuen and Mendelson are not “so related”—their designs
have virtually no overlap in appearance



EX2001, ¶¶105-106 (Yuen (EX1007) Fig. 1B (excerpted); Yuen (EX1007) Fig. 1B as modified in Petition p. 73 (annotated); Mendelson (EX1011) Fig. 7).

Mendelson’s appearance, having a radial arrangement of rectangles surrounding a central circular shape, lacks any features similar to Yuen, having an elongate central shape (yellow). EX2001, ¶¶105-106. In view of these prominent differences, and the lack of visually similar features, Masimo has failed to satisfy its burden of demonstrating the references are “so related that the appearance of certain ornamental features in one would suggest the application of those features to the other.” *Glavas*, 230 F.2d at 450. Instead, there is no suggestion to incorporate Mendelson’s features into Yuen’s device based on their appearances.

To be clear, Masimo’s reliance on the presence of a “PPG sensor” in Yuen and “suitable sensor” in Mendelson is alone insufficient to demonstrate Yuen and

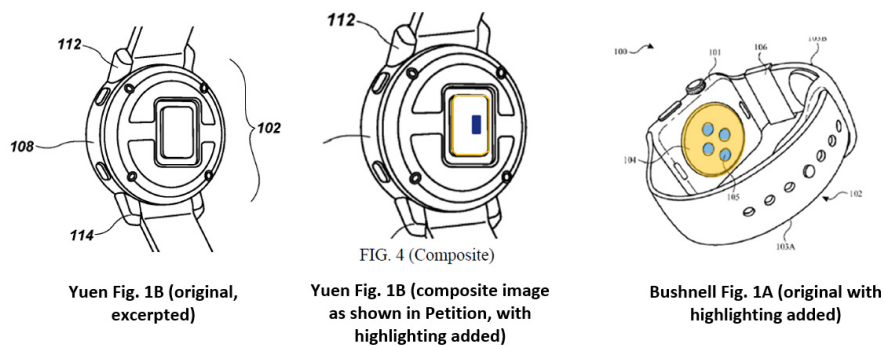
Mendelson are “so related” as to suggest application of Mendelson’s arrangement of rectangle shapes into Yuen. Pet., 75. Nothing in Mendelson’s symmetrical radial arrangement suggests application to Yuen’s offset/asymmetrical sensor. The mere presence of a space in Yuen’s design described as providing the function/use of a sensor is insufficient to suggest application of Mendelson’s specific ornamental appearance, except for improper use of the claimed design as a roadmap. *Premier Gem*, IPR2016-00434, Paper 9 at 16; *L.A. Gear*, 988 F.2d at 1124 (“Not only the individual elements, but the ornamental quality of the combination must be suggested in the prior art. . . . A reconstruction of known elements does not invalidate a design patent, absent some basis whereby a designer of ordinary skill would be led to create this particular design.”). Accordingly, Masimo has failed to demonstrate that Mendelson is an appropriate secondary reference.

b) Bushnell is Not a Proper Secondary Reference for Combination with Yuen

Bushnell’s design is significantly different than Yuen, such that the references are not “so related that the appearance of certain ornamental features in one would suggest the application of those features to the other.” *Glavas*, 230 F.2d at 450. Masimo fails to demonstrate any suggestion in the designs’ appearances to incorporate Bushnell’s features into Yuen’s design.

Bushnell's rear face has a circular feature protruding from the center of a generally squarish body. *See* EX1009, Figs. 1A, 2A. In contrast, Yuen's wristwatch rear face is circular with a convex portion at the outer perimeter edge. *See* EX1007, Fig. 3A. Moreover, the positioning of any raised portion is also different, with Bushnell's raised circular feature being positioned on the relatively square, flat rear face and Yuen's circular face including a curved perimeter edge with no raised feature positioned on the face surface.

Further, as illustrated below, Bushnell's rear wristwatch face does not include visual elements similar to Yuen's opposed, asymmetrical shapes and offset rectangular portion. EX2001, ¶¶107-108.



EX2001, ¶108 (EX1007, Fig. 1B (excerpted); Pet. 73 (EX1007, Fig. 1B as modified in Pet. (annotated); EX1009, Fig. 1A (annotated)).

In view of these unaddressed differences between Yuen and Bushnell, Masimo fails to satisfy its burden of demonstrating the references are so related in

appearance as to suggest the incorporation of features from Bushnell into Yuen’s design. EX2001, ¶¶107-109.

The above deficiencies are not remedied by Masimo’s assertion that “Bushnell is so related to Yuen because it discloses a suitable design for Yuen’s devices,” and “both references concern a circular convex surface that protrudes from the back of the wrist-worn device and incorporates the devices sensors.” Pet., 77. Contrary to Masimo’s characterization, Yuen’s alleged “circular convex surface” *is* the back of the wrist-worn device—it does not protrude from the back surface. EX2001, ¶109. Masimo further asserts “Bushnell and Yuen are further related because Yuen expressly suggests using any known PPG sensor ... which Bushnell discloses.” Pet., 78. As described above with regard to Mendelson, Masimo’s reliance on the presence of a PPG sensor, and any components of such a sensor, fail to demonstrate the *appearance* of Yuen and Bushnell are “so related” as to suggest application of Bushnell’s convex protruding surface to Yuen. *Supra*, §IV.D.2.a; *Termax*, IPR2022-00106, Paper 7 at 29. Here again, the prominent differences in appearance, with almost no visual similarity, confirm the improper hindsight nature of Masimo’s analysis. *L.A. Gear*, 988 F.2d at 1124. Accordingly, Masimo has failed to demonstrate that Bushnell is an appropriate secondary reference.

c) Masimo's Proposed Series of Modifications Beyond the Designs Depicted in Mendelson and Bushnell are Improper

Masimo acknowledges multiple additional modifications are necessary to provide the features of the '842 patent beyond that depicted by Yuen, Mendelson, or Bushnell, tacitly acknowledging that the proposed combination fails to achieve the claimed design. Pet., 78-80, 86-88. But these additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶¶110-115. The proposed modification fails for this additional reason. *See Harvey*, 12 F.3d at 1065.

For example, Masimo's assertion that "the differences between the six straight rectangle-shaped photodiodes shown above and the claimed design (eight curved rectangle-shaped photodiodes) are changes that a DOSA would have been motivated to make" (Pet., 80), fails to demonstrate that such a change would have been considered trivial by a DOSA, and that a DOSA would have further modified the proposed Yuen/Mendelson/Bushnell combination to achieve the claimed design's specific appearance.

As described above, Masimo fails to provide evidence that "curved rectangles" were known in the prior art, and even if the shape were known, this is not sufficient to support Masimo's modification beyond what is shown in the Yuen, Mendelson and Bushnell references. *Supra* §IV.C.5.b. Further, Masimo's purported

reasons for modifying the rectangular arrangement of the Yuen/Mendelson combination are not suggested by the appearance of the references, but instead are counter to the specific designs depicted in the references. *Id.*

The Petition’s analysis is further undermined by the internal shape delineated by the inner edges of Yuen’s opposed shapes, which do not form a curved or circular shape, but rather a rectangular shape. Puzzlingly, Masimo contends “the relatedness of Mendelson’s circular sensor design to the available circular area of Yuen’s design also would have suggested their combination.” Pet., 79. Yuen, however, clearly lacks any such “available circular area.” EX2001, ¶113.

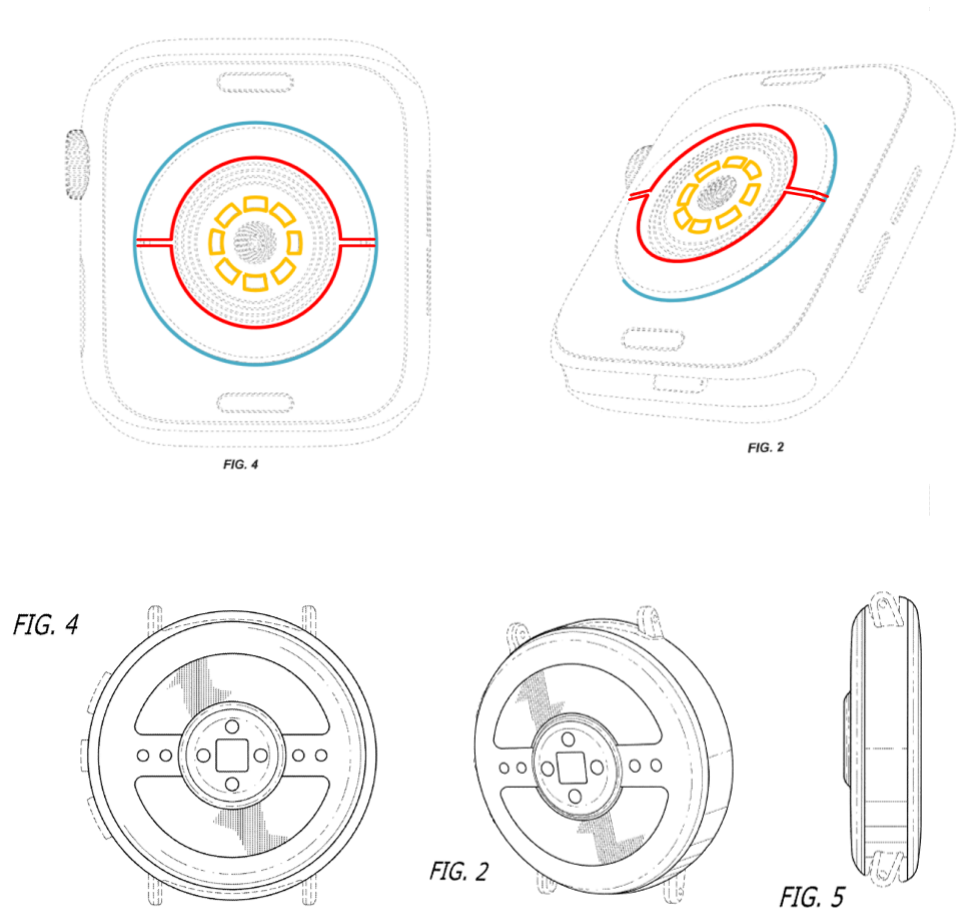
Likewise, Masimo’s hindsight motivation of “achieving a symmetrical sensor design” (Pet., 79), does not support the proposed modifications. Neither Yuen nor Mendelson depict a sensor positioned symmetrically on a housing. EX2001, ¶¶114-115. And even if the DOSA were motivated to do so (which Masimo fails to demonstrate), achieving a symmetrical design does not support the numerous modifications that Masimo proposes.

Masimo’s multiple modifications beyond the Mendelson designs—and the tortured logic required to support such modifications—is improper. Masimo’s obviousness analysis in Ground 2 is fatally deficient for at least these reasons.

E. Ground 3: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Fong in View of Mendelson and Bushnell

Ground 3 is fatally flawed because the Petition simply fails to demonstrate that Fong is a proper *Rosen* reference.

As described above, the '842 patent depicts a design having a streamlined appearance of concentric circular rings, formed by an outermost continuous circle (blue), an outer circular shape formed by thin, elongated arches positioned within the outermost continuous circle (red), and an inner circular shape is formed by an arrangement of multiple elongated four-sided shapes (yellow). *See* EX1001, Figs. 1-9.



EX2001, ¶¶116-117 (Top: EX1001, Figs. 2 and 4 (annotated); Bottom: EX1008, Figs. 4, 2, and 5).

While the inner circular shape formed by multiple four-sided shapes is central to the claimed design’s concentric circle overall appearance, any similar aspect is entirely lacking from Fong. Instead, Fong depicts centrally arranged square and diamond shapes. Given this prominent difference, and its impact on overall appearance, Fong simply lacks an appearance that is “basically the same” as the claimed design.

Moreover, the claimed design’s overall appearance differs prominently from Fong due to the outer circular shape formed by the arches (*infra*, §IV.E.1.b) and the outermost continuous circle and its relationship with the arches (*infra*, §IV.E.1.c). Each of these differences alone result in an overall appearance that is not “basically the same” as the claimed design. Collectively they compel such a finding. Ground 3 fails for these independent reasons.

Beyond failing to demonstrate a proper *Rosen* reference, the Petition relies on layers of modifications that significantly change Fong’s appearance, and that are not depicted by Fong, Mendelson or Bushnell, to recreate the claimed design. The Petition’s Ground 1 obviousness theories are woefully deficient, and the gaps in its analysis highlight that Masimo cannot demonstrate unpatentability of the design claim based on the evidence set forth in the Petition.

1. Fong is Not a Proper *Rosen* Reference

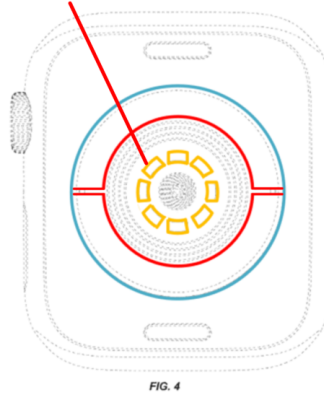
Masimo’s obviousness theory is based on the flawed premise that “any differences between Fong and the ’842 patent do not change the overall visual similarity of the designs.” Pet., 88. But the Petition here again fails to address the vastly different overall appearance provided by Fong in comparison to the claimed design. *See* EX2001, ¶118. Masimo fails to specifically address significant aspects of Fong, such as Fong’s lack of an inner circular shape formed by an arrangement of elongated four-sided shapes, and Fong’s spacing between the opposed shapes that

include interposed circular elements separating the shapes, each of which yields a markedly different overall appearance. Moreover, the Petition fails to address additional prominent differences between the claimed design and Fong, such as the relationship in the claimed design between the arches that form an outer circular shape and the outermost continuous circle. Masimo's theory that Fong is "basically the same" despite these differences is based on multiple factual and legal errors. The prominent differences between Fong and the claimed design, some of which are wholly unaddressed by the Petition, confirm that the Petition fails to demonstrate Fong is a "single reference that creates basically the same visual impression." *Levitation Arts*, PGR2018-00073, Paper 14, 16-22; *Dorman Products*, IPR2014-00542, Paper 10 at 5; *Harvey*, 12 F.3d at 1063.

a) Masimo Fails to Properly Analyze the Inner Circular Shape Formed by the Arrangement of Four-Sided Shapes of the Claimed Design in Comparison to Fong

As discussed above, the claimed design includes an inner circular shape formed by the arrangement of multiple elongated four-sided shapes forming which contributes to the concentric circle appearance that evokes a bullseye or ripples in a pond. *Supra*, §IV.A.

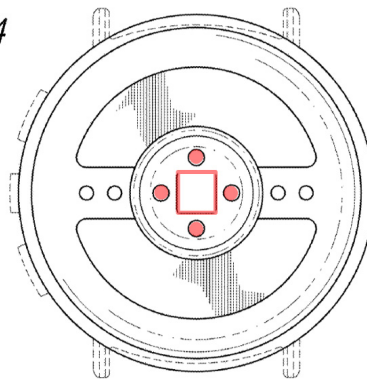
**Four-sided
shapes**



EX2001, ¶119 (EX1001, Fig. 4 (annotated)).

Masimo relies on the central square in Fong's design as providing "one or more central rectangles," and its four circles (red) as providing a purported "circular array." Pet., 95-96. But Masimo ignores aspects of Fong that render it significantly different than the claimed design's circular arrangement of four-sided shapes.

FIG. 4



EX2001, ¶120 (EX1008, Fig. 4 (highlighting added)).

For example, Fong's four circles give the impression not of a circular array but of a diamond-shaped configuration. EX2001, ¶121. The diamond-shaped

appearance is emphasized by the positioning of the four circles along flat edges of the central square. Masimo never addresses the diamond-shaped appearance conveyed by Fong’s four circles, which do not suggest an inner circular shape in their arrangement.

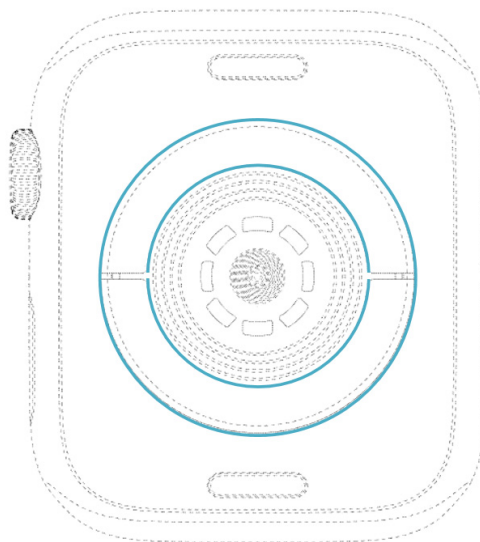
To be clear, even if an ordinary designer would have understood Fong as including a central rectangle shape and a circular array of four circles, Masimo’s analysis remains deficient in demonstrating Fong has “basically the same” appearance as the claimed design. Pet., 95. Masimo merely assumes that, if the ’842 patent’s circular arrangement of four-sided shapes is included within the claimed scope, “Fong remains an appropriate primary reference for the same reasons discussed above regarding Paulke.” Pet., 96. Such a bare conclusion that lacks any comparison of Fong’s four circles and the claimed design—not followed by the requisite analysis—fails to satisfy Masimo’s burden. Instead, these features highlight fundamental differences compared to the claimed design—circle shapes positioned around a central square in a diamond arrangement. EX2001, ¶121.

The Petition cites paragraphs 117-120 of the Delman Declaration, but these paragraphs parrot the petition without any additional underlying explanation. *Compare* EX1003, ¶¶117-120 *with* Pet., 94-95. Such an “*ipse dixit* declaration” is insufficient and does nothing to remedy the Petition’s deficient analysis. *TQ Delta*, 942 F.3d at 1362-64.

Fong lacks the inner circular shape provided by the arrangement of multiple elongated four-sided shapes of the '842 patent, and Fong's diamond-shaped central design fails to provide an appearance that is "basically the same" as the '842 patent's overall appearance of concentric circles. Accordingly, Fong is not a proper *Rosen* reference for this independent reason

b) Masimo Fails to Properly Analyze the Outer Circular Shape Formed by the Arches of the Claimed Design in Comparison to Fong

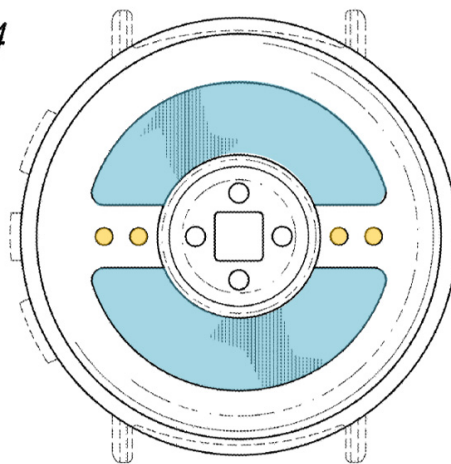
As discussed above, the claimed design includes an outer circular shape formed by an arrangement of unified thin, elongated arch shapes that contribute to the '842 design's overall appearance of well-proportioned concentric circles. *Supra*, §IV.A.



EX2001, ¶122-123 (EX1001, Fig. 4 (annotated)).

In contrast to the '842 patent's design, Fong depicts wide, opposed shapes (below, blue) separated from one another at the ends by a significant gap that provides an appearance of opposed, divided shapes. EX2001, ¶¶122-125. Moreover, this separation is visually highlighted by the presence of multiple circular elements (yellow). In particular, two circular elements are positioned between each end of the opposed shapes (e.g., as shown in Fig. 4). These circular elements are significant to Fong's appearance, aligned with two additional circular elements and the central square. Together, the circular elements and central square extend across the entire width of the opposed shapes and visually divides the design into upper and lower portions (blue) separated by a middle row of the circle and square elements. EX2001, ¶¶122-126.

FIG. 4



EX2001, ¶¶122-123 (EX1008, Fig. 4 (highlighting added)).

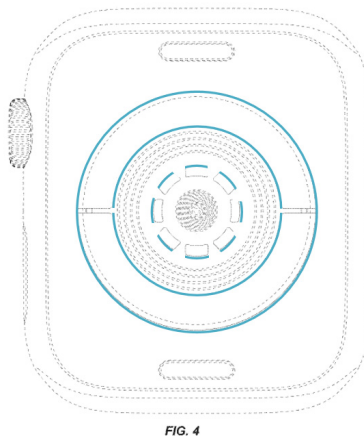
Far from the claimed design's unified, outer circular shape, Fong's round elements separating ends of the two opposed shapes highlight the distinct and opposed appearance of Fong's shapes. EX2001, ¶123.

The differences in Fong's visual appearance compared to the '842 patent are not a mere matter of degree. Fong's opposed shapes are spaced apart from one another not only by a large space, but by additional elements interposed in this space that are significant to Fong's different appearance. EX2001, ¶¶124-126. Masimo fails to specifically address these aspects of Fong, which plainly lacks an appearance that is "basically the same" as the overall appearance of continuous concentric circles provided by the '842 patent.

Accordingly, Fong is not a proper *Rosen* reference and Masimo's analysis is fatally deficient for this independent reason.

c) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches of the Claimed Design in Comparison to Fong

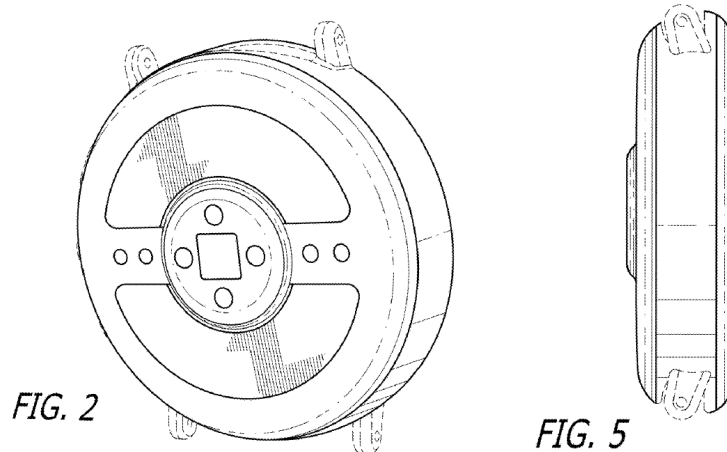
The claimed design's overall appearance of concentric circles is provided in part by the outermost continuous circle, and the relationship between the outermost continuous circle and the arches that form an outer circular shape within the outermost continuous circle. *Supra* §IV.A.



EX2001, ¶¶127-128 (EX1001, Fig. 4 (annotated)).

The Petition fails to address the outermost continuous circle in its comparison to Fong, never identifying such a feature in Fong at all. Likewise, the Petition does not address Fong's different overall appearance that lacks the series of continuous and concentric circles of decreasing size, suggesting a target or bulls-eye provided by the '842 patent.

Fong's design includes opposed shapes surrounding a raised circular central portion, and lacks any continuous outer circle proximate Fong's opposed shapes.

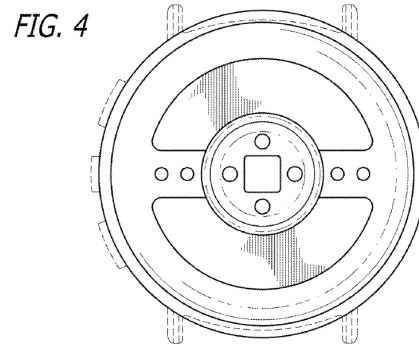


EX1008, Figs. 2 and 5.

The lack of outermost continuous circle in Fong's design is not trivial or *de minimis*—it goes to a fundamental aspect of Fong in which top and bottom portions are divided by a central portion that includes a row of small circles and a central square that extend across the device's back. EX2001, ¶¶128-130. Unlike the claimed design, Fong's opposed features are visibly separated and not encompassed by a closely-proximate outermost continuous circle. *Id.*

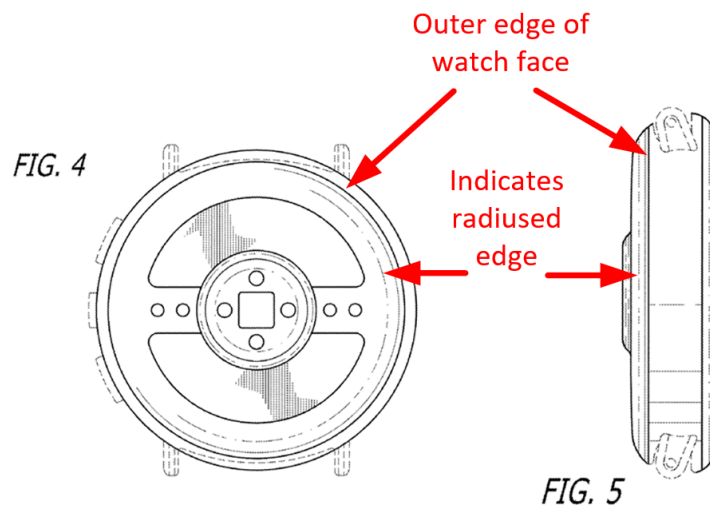
Additionally, the Petition ignores the claimed design's position of the outermost continuous circle relative to the inner edge of the arches and to the outer edge of the four-sided shapes.

In contrast, Fong's opposed shapes have a much thicker appearance, and Fong altogether lacks an outermost continuous circle in close proximity to the opposed shapes.



EX1008, Fig. 4.

To the extent Masimo relies on the circle delineating the watch's back face in Fig. 4 (which the Petition never mentions), Fong's Fig. 2 makes clear that this line is included merely to show the edges of the curved rear watch surface. EX2001, ¶¶131-133.



EX2001, ¶¶132-133 (EX1008, Figs. 4 and 5 (annotated)).

Additionally, Fong's opposed shapes (inner edges in blue, below) are spaced significantly inwardly from the line included in Fig. 4 (yellow, below), here again

conveying a different overall appearance that lacks the claimed design's streamlined, well-proportioned appearance.

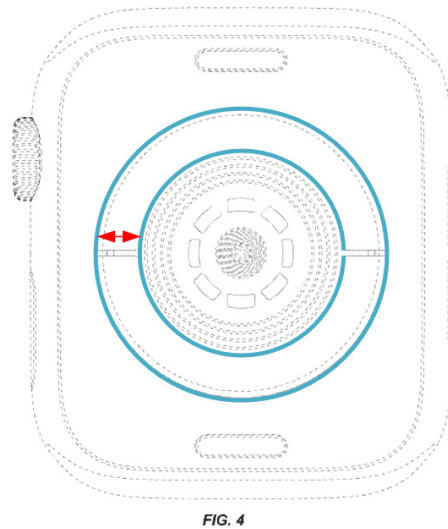
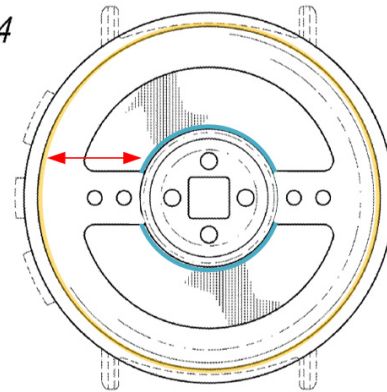


FIG. 4



EX2001, ¶134 (Left: EX1001, Fig. 4 (annotated); Right: EX1008, Fig. 4 (annotated)).

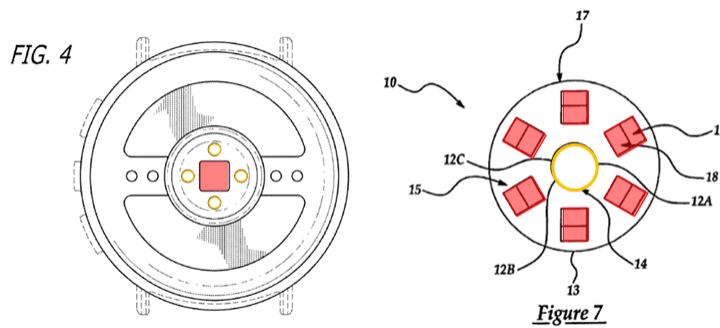
Because the Petition has failed to provide explanation that accounts for these visible differences, Masimo has not demonstrated that Fong is “a single reference that creates basically the same visual impression” as the claimed design. *High Point Design*, 730 F.3d at 1314; *Harvey*, 12 F.3d at 1063 (“Because major modifications would be required to make Harvey’s prior art vase look like the claimed designs, it cannot qualify as a basic design.”). The Petition is thus insufficient to establish that Fong is an appropriate primary reference, and therefore fails to demonstrate a reasonable likelihood that it would prevail in showing that the design claim is rendered obvious under Ground 3 for this independent reason.

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Fong in View of Mendelson and Bushnell To Create the Claimed Design

a) Mendelson is Not a Proper Secondary Reference for Combination with Fong

The Petition fails to demonstrate that Mendelson’s sensor design is “so related” to Fong that Mendelson is a proper secondary reference. *Glavas*, 230 F.2d at 450. Masimo describes “Fong’s design includes arc-shaped electrodes surrounding a central PPG sensor” and “Mendelson is so related to Fong because it discloses a suitable sensor for Fong’s design.” Pet., 97. Masimo’s theory is based on legal error by improperly focusing on Mendelson’s use as a sensor rather than Fong’s and Mendelson’s visual appearances, which have little in common and many readily apparent differences. *Termax*, IPR2022-00106, Paper 7 at 29 (“limited to whether the articles are ‘so related’ (*i.e., so similar in appearance*)”).

In contrast to Mendelson’s arrangement of rectangle pairs about a central circle, Fong includes a central square element with four circles arranged along the square’s edges. Mendelson also lacks any relationship between its pairs of rectangles and surrounding opposed arch shapes, which are not present in Mendelson. EX2001, ¶¶136-137.



EX2001, ¶¶136-137 (EX1008, Fig. 4 (annotated); EX1011, Fig. 11 (annotated)).

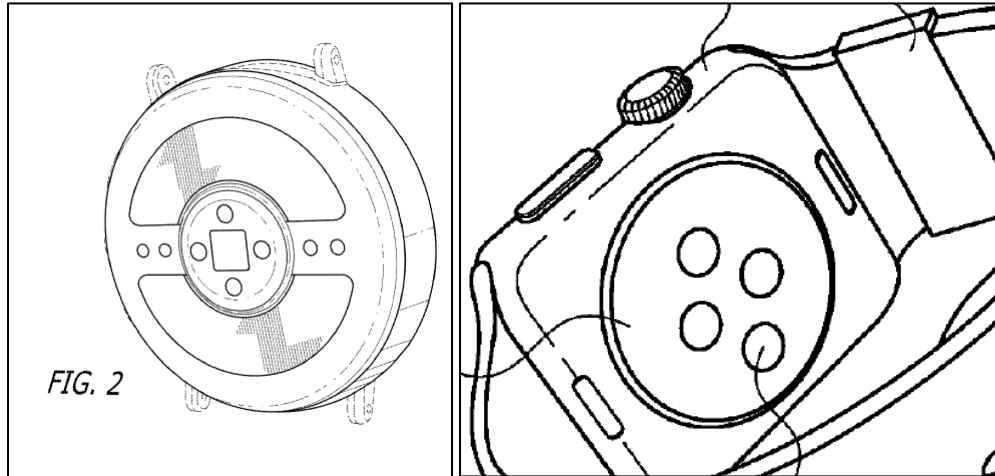
Fong’s appearance having four circles (yellow) arranged around the central square shape (red) is significantly different from Mendelson’s appearance having pairs of rectangles (red) surrounding a central circle (yellow). The Petition never specifically addresses these differences, and fails to satisfy its burden of demonstrating these references are so related in appearance despite these differences. *Glavas*, 230 F.2d at 450.

b) Masimo’s Proposed Combination of Bushnell with Fong is Improper

Masimo’s proposed combination of Bushnell’s “convex housing component” with Fong’s design is improper. EX2001, ¶¶138-140. As described above, Bushnell’s rear face is square with a circular feature protruding from the square’s center. *See* EX1009, Figs. 1A, 2A. Bushnell includes four circular elements on the flat top surface of the protrusion. Fong also includes a protruding central portion,

on which the square central element and configuration of four circles are positioned.

See EX1008, Fig. 2



Left: EX1008, Fig. 2; Right: EX1009, Fig. 1A (excerpted).

Masimo's proposed combination of Bushnell's "convex housing" with Fong results in a fundamental change contrary to Fong's original design. Fong includes a protruding central circle that is on a different plane compared to the pair of opposed shapes above and below the central protruding circle. Petitioner ignores that its proposal would eliminate this arrangement in favor of a different arrangement that would cause the opposed shapes to protrude outwardly, and the inner circle to instead be recessed. *See, e.g.,* Pet., 103 (showing Petitioner's proposed combined design). Masimo fails to demonstrate a DOSA would have considered such a modification to the detriment of Yuen and Mendelson's original designs. *See Termax*, IPR2022-00106, Paper 7 at 30 (rejecting proposal that would result in fundamental change and indicating "the notably consistent symmetrical nature of both designs would not

suggest that a skilled designer would destroy that symmetry by using a rounded platform with a rectangular platform”) (citing *Apple*, 678 F.3d at 1331).

Accordingly, Masimo’s proposed combination of Fong with Bushnell is improper.

c) Masimo’s Proposed Series of Modifications Beyond the Designs Depicted in Mendelson and Bushnell are Improper

Masimo acknowledges that multiple additional modifications are necessary to provide features of the claimed design beyond that depicted by Fong, Mendelson, or Bushnell, here again tacitly acknowledging that modifying Fong to use Mendelson’s “circular array of rectangular photodiodes” and Bushnell’s “convex housing component 104” fails to achieve the claimed design. Pet., 98, 100-102. These additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶141-142.

The deficiencies discussed above are not remedied by Masimo’s improper reliance on motivations based on purported functionality of various features rather than the actual design appearances. The alleged motivation of replacing Fong’s purported PPG sensor (which is not disclosed or even mentioned in Fong) with a different sensor does not provide motivation for incorporating photodiodes having the particular ornamental appearance the Petition proposes. *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than ornamental

appearance, and indicating “the Federal Circuit has made clear that the motivation to modify one design with another is “limited to whether the articles are ‘so related’ (*i.e., so similar in appearance*)”). Masimo’s reliance on additional functional alleged improvements achieved by the combination of Fong with Mendelson and Bushnell are improper. For example, Masimo’s assertions that the combination would have been motivated by “improving Fong’s PPG sensor accuracy” and that Fong and Bushnell’s “PPG sensors necessarily include the same basic components” improperly rely on use/utility rather than the appearance of Fong, Mendelson, and Bushnell. Pet., 101-102. Accordingly, Masimo’s utility-based motivations are insufficient to remedy its deficiencies in demonstrating that the appearance of Mendelson and Bushnell are “so related” to Fong as to suggest application to Fong.

For reasons similar to those discussed above in Grounds 1 and 2, Masimo’s additional modifications to alter the number, shape, and edges of Mendelson’s rectangular photodiodes beyond what is depicted in Fong, Mendelson, and Bushnell is improper. *See supra* §IV.C.2.b and IV.D.2.c; *see also Harvey*, 12 F.3d at 1065.

V. CONCLUSION

For the foregoing reasons, Patent Owner requests that the Board deny institution.

Respectfully submitted,

Date: June 29, 2023

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Case No. IPR2023-00702
Attorney Docket No: 50095-0147IP1

CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response totals 13,926, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on June 29, 2023, a complete and entire copy of this Patent Owner's Preliminary Response and its supporting exhibits were provided via email, to the Petitioner by serving the email correspondence addresses of record as follows:

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2023-07-12 [008] Patent Owner's Preliminary
Response for D'279 Patent (IPR2023-00774)

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MASIMO CORPORATION
Petitioner,

v.

APPLE INC.,
Patent Owner

Case IPR2023-00774
U.S. Patent D883,279

PATENT OWNER'S PRELIMINARY RESPONSE

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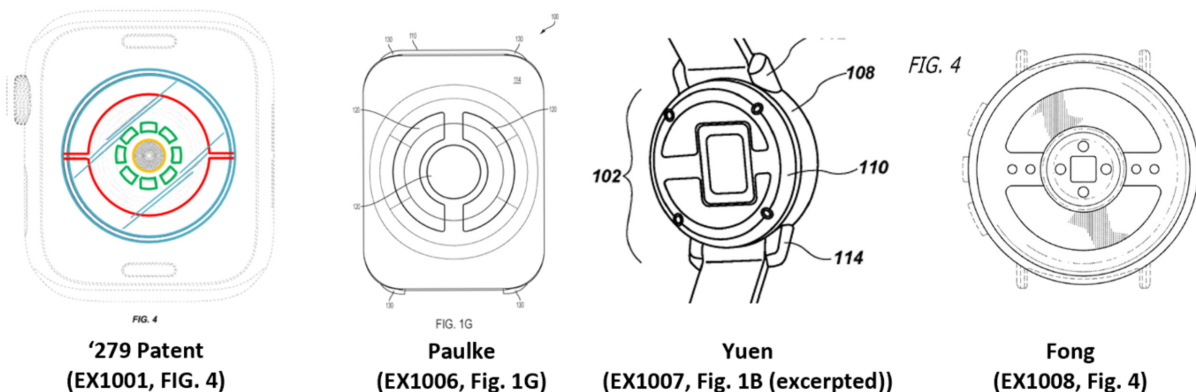
Case No. IPR2023-00774
Attorney Docket No: 50095-0151IP1

LIST OF EXHIBITS

Exhibit Number	Description
2001	Declaration of Lance Gordon Rake
2002	Replacement Drawings filed in U.S. Design Patent Application 29/684,822 on April 12, 2019
2003	<i>Aries Watches Watch AW80 – Unisex,</i> https://allegro.pl/oferta/smartwatch-zegarek-ekg-pulsoksymetrtermometr-pl-9927412179 .
2004	<i>P11 Plus 0.96 Inch Screen ECG+HRV Smart Health Bracelet, Support Body Temperature, Dynamic Heart,</i> Newegg.com, http://www.newegg.com/p/3EG-000R-000F7 .

I. INTRODUCTION

Masimo’s Petition challenging U.S. Patent No. D883,279 (“the ’279 patent”) is fatally deficient in multiple ways. The Petition fails to identify any reference that has an appearance “basically the same” as the claimed design’s series of concentric circle shapes and protruding circular element having a domed appearance, and thus none of Grounds 1-3 include a proper primary reference. For example, Paulke, Yuen, and Fong each altogether lack an inner circular shape formed by an arrangement of multiple elongated four-sided shapes (green), and the profile having a domed appearance, that are central to the claimed design’s overall appearance. These prominent features, and resulting overall appearance, are simply not present in any of the primary references.



This alone provides an independent reason why Paulke, Yuen, and Fong lack an appearance that is “basically the same” as the claimed design. Together with multiple other readily apparent differences between the claimed design and Paulke,

Yuen, and Fong—many of which are never specifically addressed by the Petition—the Petition is woefully deficient in demonstrating any of these references are proper primary references.

The Petition relies on layers of yet additional factual and legal errors. Masimo’s proposed claim construction focuses on design concepts that fail to accurately portray the actual claimed design, and which improperly “factors out” multiple ornamental features significant to the design’s cohesive overall appearance. Rather than address the claimed aspects that contribute to the design’s overall appearance, and their differences from the prior art, Masimo’s analysis obscures the design without the required analysis relative to the cited references, each of which have fundamental differences that contrast with the ’279 patent’s overall appearance. These deficiencies in the cited art are further confirmed by Masimo’s attempt to make yet further layers of modifications beyond what are depicted by these references.

For at least the reasons explained below, Masimo fails to demonstrate a reasonable likelihood that the design claim is unpatentable. The Petition should be denied.

II. BACKGROUND

Apple is known as an innovator in consumer products and a leader in industrial design. Apple’s innovative products are produced through its significant

investment in research and development in technology and product design. Each product is meticulously created to be appealing and sleek, with numerous iterations to perfect the design of each product and to incorporate aesthetic themes that run through the Apple products.

The Apple Watch is no exception, and has been a best-seller and consumer favorite in part due to its innovative, stylish, and distinctive style. The design claimed in the '279 patent is the result of tremendous design efforts to produce a consumer-wearable product incorporating signature Apple design qualities such as elegant and simple designs that echo themes in other Apple products. As discussed in greater detail below, a Designer of Ordinary Skill (“DOSA”) would have recognized these qualities of the overall claimed design, and appreciated the efforts underlying the design that immediately distinguish its appearance from prior designs.

III. LEVEL OF ORDINARY SKILL

For the purposes of this case, a Designer of Ordinary Skill in the Art (“DOSA”) would have a degree in Industrial Design or Mechanical Engineering, and at least two years of professional experience creating Industrial Designs of consumer products. EX2001, ¶19.

IV. MASIMO CANNOT PREVAIL ON ANY CHALLENGED CLAIM

A. Masimo’s Proposed Claim Construction Ignores Features of the Claimed Design and Relies on General Design Concepts

Masimo’s proposed claim construction is deficient because it fails to address prominent features of the claimed design and, critically, the contributions of those features to the overall appearance. *See Skechers U.S.A., Inc. v. Nike, Inc.*, IPR 2017-00617, Paper 13 at 7-8 (PTAB July 6, 2017) (“While we recognize that the illustration, rather than a verbal description, is the better representation of the claimed design ... Petitioner’s verbal description in these cases does not go far enough.”). While a verbal description may not always be necessary, any verbal description must identify readily observable features of the claimed design that impact its overall appearance. *See Skechers*, IPR2017-00617, Paper 13 at 8; *see also Vitro Packaging, LLC v. SaverGlass, Inc.*, IPR2015-00947, Paper 13 at 5 (PTAB Sept. 29, 2015) (“We are not persuaded that this is an accurate portrayal of the claimed bottle because it focuses on general dimensions, ratios, and elements common to many bottles.”). As described below, this error infects each of Masimo’s grounds, and therefore compels denial of the Petition. *See, id.* at 13 (denying institution, stating, “[w]e do not find Petitioner’s arguments persuasive because Petitioner focuses on design concepts rather than actual appearance and specific design characteristics.” (citation omitted)).

The '279 patent claims a unique, elegant design for an “electronic device” having an overall appearance of multiple concentric circles, evoking a bulls-eye, target, or ripples in a pond. EX2001, ¶¶20-28; EX1001, Figs. 1-9; EX2002, Figs. 1-9.¹ As illustrated below, the claimed design includes a protruding circular element with a beveled edge protruding outward from an outermost continuous circle (blue). *Id.* An outer circular shape is formed by thin, elongated arches positioned within the outermost continuous circle (red). *Id.* The inner edges of the arches are raised relative to the outermost continuous circle, resulting in the appearance that the arches protrude upward from the outermost continuous circle. Moving toward the center of the concentric circular arrangement, spaced apart from the outer circular shape, an inner circular shape is formed by an arrangement of multiple elongated four-sided shapes (green). *Id.* The inner circular shape is smaller in diameter than the outer circular shape. *Id.* The design also includes a central round shape, spaced apart from and positioned within the inner circle shape. The design has a domed appearance that appears to protrude out from the surrounding surface of the electronic device (e.g., the plane of the outermost continuous circle).

¹ EX2002 is the supplemental drawings filed with the USPTO on December 14, 2021.

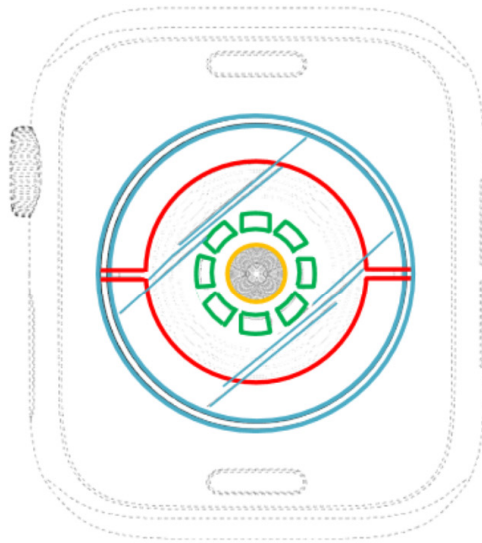


FIG. 4

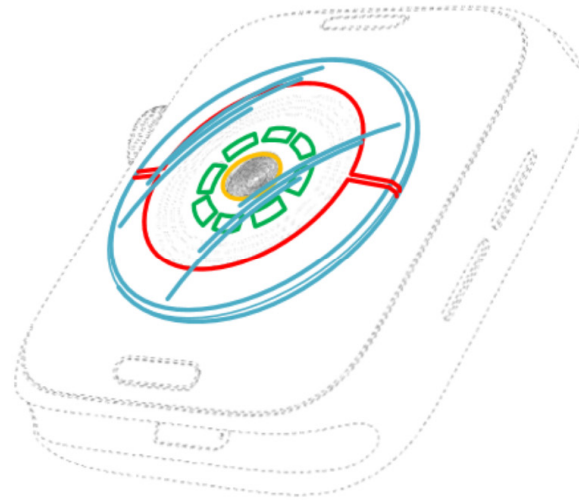
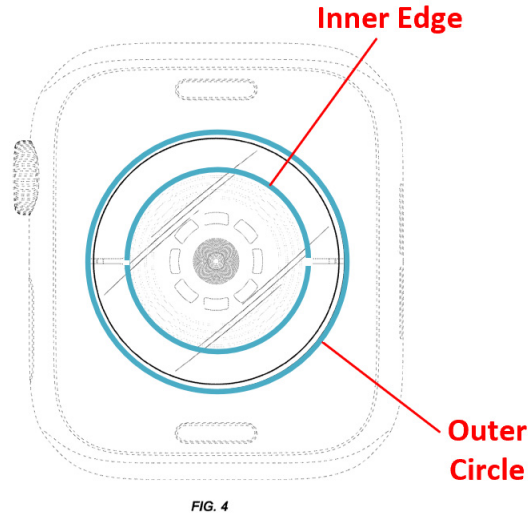


FIG. 2

EX2001, ¶20 ((EX1001, Figs. 2 and 4 (annotated))).

The claimed design's overall appearance evokes concentric circles within the outermost continuous circle. *Id.* Moving inward from the outermost continuous circle, the arch shapes are positioned such that the outer circular shape appears as a unified ring or circular shape. *Id.*

The outer circular shape is formed by elongated arches. The distance between the inner edge of the arches and the outermost continuous circle is small compared to the diameter of the outermost continuous circle, contributing to the appearance of an elegant, precise and streamlined shape. EX2001, ¶21.



EX2001, ¶21 (EX1001, Fig. 4 (annotated)).

Toward the center of the concentric circular arrangement from the outer circular shape is an inner circular shape formed by multiple elongated four-sided shapes. The elongate shape of the four-sided shapes that reach toward one another emphasize the arrangement's circular shape, and complement the curvature of the outermost continuous circle and the outer circular shape formed by the arches.

EX2001, ¶¶22-24.

Four-sided shapes

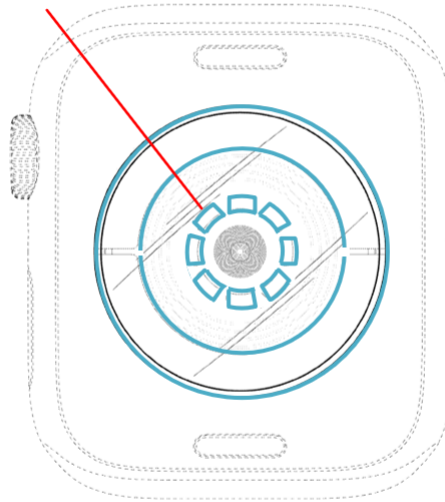


FIG. 4

EX2001, ¶23 (EX1001, Fig. 4 (annotated)).

The diameter of the inner circular shape formed by the multiple four-sided shapes is smaller than the diameter of the outer circular shape formed by the arches. Together with the arch shapes and outermost continuous circle, the inner circular shape formed by the multiple four-sided shapes contribute to an overall appearance of multiple concentric circles, evoking a bulls-eye, target, or ripples in a pond. EX2001, ¶24. The concentric circles evoked by the outermost continuous circle, inner edges of the arch shapes, outer edges of the multiple four-sided shapes, and central round shape are highlighted in the annotated figure below.

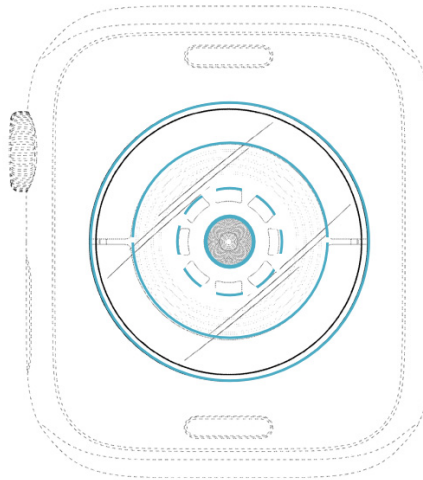


FIG. 4

EX2001, ¶25 (EX1001, Fig. 4 (annotated)).

The protruding circular element has a beveled edge protruding outward from the outermost continuous circle and a domed appearance inward of the beveled edge.

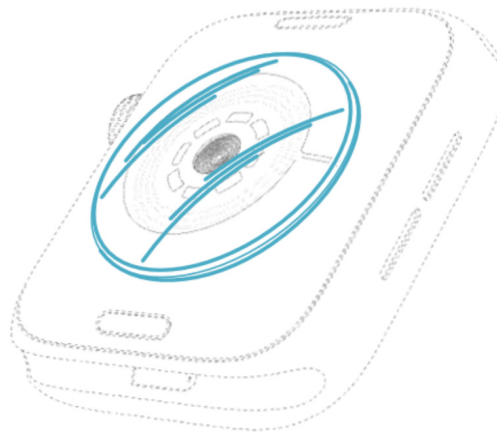


FIG. 2

EX2001, ¶26 (EX1001, Fig. 2 (annotated)).

The concentric rings suggested by the elements of the outermost continuous circle, arch shapes, and plurality of four-sided shapes, are prominently visible.

EX2001, ¶¶27-28. The physical position of the arch shapes, and their elongate proportions compared to the diameter of the outermost continuous circle, suggests a unified, continuous circle despite the arch shapes not touching each other. Similarly, the positions of the four-sided shapes are close to one another, with their elongate proportions extending towards one another, accentuating a circular appearance formed by the four-sided shape's outer and inner edges. *Id.*

Masimo ignores immediately observable features in its claim construction. *See* Pet., 7; *see also* 11-12. For example, Masimo describes the '279 patent "claims the design of a circular protrusion on the back of the device. . . . the protrusion includes two arc-shaped portions (gray) surrounding a circular array of rectangles (blue), with the rectangles surrounding concentric circles (orange). The protrusion's outermost surface (red) is convex." *Id.* (noting the design "also includes a vertical edge (pink) and chamfered edge (green) between the convex surface and the back of the device." But this construction ignores the actual appearance of many of the prominent features noted above, including 1) the outermost continuous circle, 2) the unified circular appearance provided by the arches, 3) the distance between the inner edges of the arches and the outermost continuous circle that is relatively small and complementary to the proportions of other features, and 4) the elongated four-sided shapes arranged to complement the curvature of the outermost continuous circle and the arch-shaped portions. Each of these features contribute to the unique, concentric

circular overall appearance, and are significant to the ordinary designer. EX2001, ¶29.

Ultimately, Masimo's generic description of design concepts and omission of the appearance provided by the actual claimed shapes and their relationships fails to recognize the claimed design's overall impression. These omissions taint each of the Petition's grounds, warranting denial of the petition. *Infra*, §§IV.C-E; *see also*, *Macsports, Inc., v. Idea Nuevo, Inc.*, IPR2018-01006, Paper 6 at 12 (PTAB Nov. 13, 2018) (denying institution); *Vitro Packaging*, IPR2015-00947, Paper 13 at 5 (denying institution); *Skechers*, IPR2017-00617, Paper 13 at 13 (denying institution).

B. Masimo's Proposed Construction Erroneously "Factored Out" Purportedly Functional Aspects of the Design

In an attempt to map the '279 patent's unique design to the prior art, Masimo relies on a construction that improperly "factored out" meaningful aspects of the design. Even if particular aspects of the design are associated with a functional purpose, they have ornamental contributions that cannot be excluded from the claimed design. Masimo's proposal is based on legal error. Additionally, Masimo improperly imports purported functionality from a commercial embodiment, ignoring that such functionality is not required or mentioned by the '279 patent, and

ignores the numerous alternative designs that can achieve the same or similar functionality.

1. Even if Particular Features are Associated with a Functional Purpose, They Contribute to the Overall Appearance of the Design and Cannot be “Factored Out”

As the Federal Circuit explained in *Sport Dimension*, “[w]hile we agreed that certain elements of the device were functional, their functionality did not preclude those elements from having protectable ornamentation.” *Sport Dimension, Inc. v. Coleman Co.*, 820 F.3d 1316, 1321 (Fed. Cir. 2016) (“in no case did we entirely eliminate a structural element from the claimed ornamental design, even though that element also served a functional purpose”). Masimo’s “construction in this case conflicts with that principle of design patent claim construction because it eliminates whole aspects of the claimed design.” *Id.*; Pet., 16; *see also* 49 (“should be disregarded”); 51 (“should be disregarded”); 54 (“should be disregarded” and “design encompasses *any arrangement* of rectangles surrounded by and spaced apart from the arc-shaped portions.”); 57 (“should be disregarded”); 79; 81; 82; 85; 98; 99; 101; 103. Even if particular aspects of the claimed design can have a functional purpose (which Masimo fails to demonstrate), they are still significant to the overall ornamental appearance of the ’279 patent. Masimo’s assertions that these features be “factored out” is based on legal error and must be rejected.

The Petition conspicuously omits discussion of *Sport Dimension* and subsequent decisions highlighting that “in no case did [the Federal Circuit] entirely eliminate a structural element from the claimed ornamental design,” even if the element also served a functional purpose. *Sport Dimension*, 820 F.3d at 1321. Masimo engages in the same prohibited practice as the *Ethicon* District Court, relying on a construction that “factored out” features from the claimed design. *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1328 (Fed. Cir. 2015) (reversing district court that “found that because each of the designs of the trigger, torque knob, and button must be ‘factored out’ under *Richardson v. Stanley Works*, . . . the Design Patents had no scope.”). It would be reversible error for the Board to do the same.

“[T]he claim construction in *Richardson* did not exclude those components in their entirety. Rather, the claim construction included the ornamental aspects of those components,” and “[a]s such, the language ‘dictated by their functional purpose’ in *Richardson* was only a description of the facts there; it did not establish a rule to eliminate entire elements from the claim scope.” *Apple Inc. v. Samsung Elecs. Co.*, 786 F.3d 983, 998 (Fed. Cir. 2105). Masimo’s legal error taints the entirety of its analysis, providing an independent reason that its construction is unsupportable. Each of the outermost continuous circle, domed appearance, outer circular shape provided by the arch-shaped portions, inner circular shape provided

by the arrangement of elongated four-sided shapes, and spacing of the outermost continuous circle, arch-shaped portions' inner edges, and four-sided shapes relative to one another has an ornamental contribution significant to the claimed design's overall appearance. EX2001, ¶¶20-29.

Masimo's claim construction is premised on a further legal error by asking the Board to consider each aspect of the claimed design separately. Contrary to Masimo's assertions that particular aspects be "factored out," the Federal Circuit has repeatedly explained "design patents protect the *overall* ornamentation of a design, not an aggregation of separable elements." *Sport Dimension*, 820 F.3d at 1322. The features depicted by the '279 patent's claimed design must be considered together in view of the overall appearance achieved by the claimed features—here, including a series of concentric circles reminiscent of a bullseye or ripples in a pond. EX2001, ¶¶23-28. By "factoring out" structural elements from the claim, Masimo "improperly converted the claim scope of the design patent from one that covers the overall ornamentation to one that covers individual elements." *Sport Dimension*, 820 F.3d at 1322. This is improper.

2. Masimo's Focus on Functionalities of the Commercial Embodiment of the '279 Patent Constitutes Legal Error

Masimo's functionality discussion is based on yet another independent error. Masimo's attempt to "factor out" design aspects is premised on purported

functionality that is not required, or even mentioned, by the '279 patent. Instead, Masimo's functionality arguments improperly incorporate uses of an underlying commercial product into the design of '279 patent. For example, Masimo's functionality arguments are premised on the presence of wireless charging components located between the arch-shaped features and the arrangement of four-sided shapes. Pet., 26 ("the claimed arc-shaped portions' design is also dictated by the need to ensure that the electrodes do not interfere with other components."); 18 (referring to "wireless charging" of a commercial product); 22. But nothing in the '279 patent tethers the claimed ornamental shapes to wireless charging components, or any other particular charging component—the '279 patent is directed to an "electronic device" without any requirement of wireless charging at all. *See Berry Sterling Corp. v. Pescor Plastics, Inc.*, 122 F.3d 1452, 1455 (Fed. Cir. 1997) (vacating summary judgment of invalidity on functionality because district court erred in considering functional limitations of commercial embodiment rather than the claimed design). Indeed, "the court cannot use the limitations of the commercial embodiment of the underlying article of manufacture to impose limitations on the scope of the design patent." *Id.*; *see also* Pet., 13-16. Masimo's functionality arguments are premised on features extraneous to the claimed design, rather than the actual features shown and described by the '279 patent. *See id.* This is yet a further

independent reason that Masimo's claim construction is erroneous and cannot be adopted.

3. A Multitude of Alternative Designs Highlight the Ornamental Contributions of Features of the Claimed Design

There is no dispute that “[w]hether suitable alternative designs are available is ‘an important – if not dispositive – factor in evaluating the legal functionality of a claimed design.’” *Ethicon*, 796 F.3d at 1329-30; Pet., 11. Here, multiple suitable alternative designs exist as described below that provide the same or similar functionality. The elements of the ’279 patent contribute to its overall appearance, and cannot be “factored out.”

For example, the Aries AW80 watch is described as enabling measurement of ECG, heart rate tracking, and blood oxygen tracking, and uses a magnetic charging cable. *See* EX2003, 1, 5-6, 11, 13-16. The AW80 accomplishes its functionalities with a design that includes opposed shapes on either side of a central band including square and rectangular sensors, and thus has a rear face having an appearance significantly different than the ’279 claimed design. EX2001, ¶¶30-32.



EX2003, 6-7.

As another example, the P11 Plus watch is described as enabling measurement of ECG, heart rate tracking, and blood oxygen tracking. *See* EX2004, 1-3. The P11 Plus accomplishes its functionalities with a design that includes three rectangular electrodes, such that its rear face has a significantly different appearance than the '279 claimed design. EX2001, ¶¶33-34.



EX2004, 3.

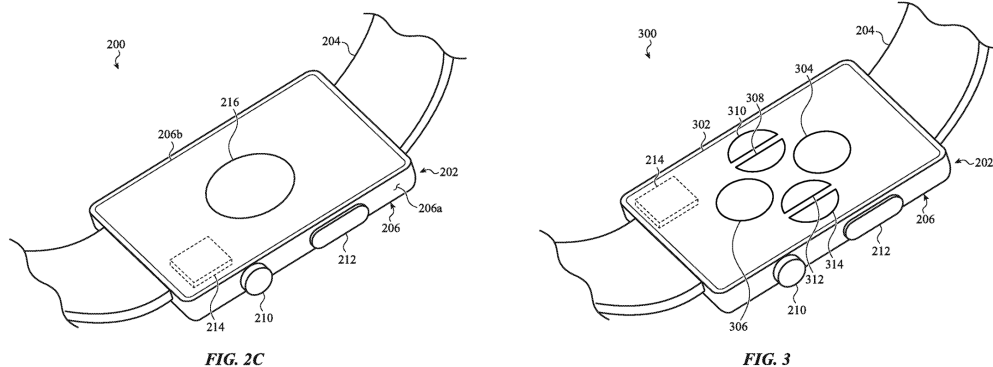
The Petition is silent as to these alternative designs.

As discussed in further detail below, references cited by the Petition itself also confirm the existence of alternative designs as to each of the features identified by Masimo as purportedly functional, and confirm the features identified by Masimo contribute to the claimed design's ornamental appearance. *See e.g.*, Pet., 24, 33-34.

a) The Specific Arrangement of the Arch-Shaped Portions is Decorative and Contributes to the Unique Overall Appearance

Masimo points to the '157 utility patent (U.S. 10,610,157) as explaining that the electrodes are “arc-shaped and positioned” and “sized” to achieve the functions of providing electrical contact between the electrodes and a wearer's skin. Pet., 24

(citing EX1024, 17:20-34; 13:54-59). The '157 patent itself, however, discloses multiple arrangements, shapes, and sizes of electrodes to achieve the stated purpose while having different appearances including a single rear-facing electrode (Fig. 2C), an arrangement of half-circle and circular electrodes (Fig. 3), or other arrangements. *See* EX1024, 17:24-34; EX2001, ¶¶36-38.



EX1024, Figs. 2C and 3.

b) The Specific Arrangement of the Four-Sided Shapes is Decorative and Contributes to the Unique Overall Appearance

The multitude of alternative designs confirm that the '279 patent's particular appearance, including number, size, and configuration of four-sided shapes contributes ornamentally to the overall appearance. For example, the '157 Patent reflects multiple alternative arrangements of photodiodes that enable functionality of emitting and receiving light from the wearer's skin. *See* EX1024, 15:34-40, 13:59-63; *see also* EX2001, ¶¶39-40. Other examples of alternative designs are

provided by Masimo's citation to a plethora of references illustrating different photodiode configurations. *See* Pet., 34 (citing EX1038, 2-3 and EX1014, ¶¶68).

c) The Concentric Circles and Overall Circular Shape is Decorative and Contributes to the Unique Overall Appearance

Masimo contends that the overall circular shape of the claimed sensor design is functional. Pet., 33-34. But, here again, Masimo's own citations demonstrate multiple suitable alternative designs having non-circular shapes. EX2001, ¶¶41-42; EX1038, 2-3.

d) The Domed Profile is Decorative and Contributes to the Unique Overall Appearance

Masimo alleges that "the convex surface, chamfered edge, and vertical edge," are all dictated by functionality. Pet., 17. The Petition cites the '157 patent, but nothing in the '157 patent describes that a particular convex shape is required, and Masimo never identifies any relevant discussion of a "chamfered edge" or "vertical edge" that Masimo purports to be dictated by function. Indeed, FIG. 19 cited by the petition at page 22 illustrates a different shape. EX2001, ¶43.

C. Ground 1: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Paulke in View of Mendelson, Bushnell, and Chung

Ground 1 is fatally flawed because the Petition fails to demonstrate that Paulke is a proper primary reference in view of major aspects of the design that are entirely

absent. From there, the Petition relies on multiple layers of modifications based on a four-way combination, along with yet additional modifications not based on features depicted in the references at all, in an attempt to recreate the claimed design. This is simply insufficient to demonstrate a reasonable likelihood of unpatentability.

The '279 patent depicts a design having a streamlined appearance of multiple concentric circles, including, in part, a protruding circular element with a beveled edge protruding outward from an outermost continuous circle (blue), an outer circular shape formed by multiple thin, elongated arches (red), and an inner circular shape formed by an arrangement of multiple elongated four-sided shapes (green). *Supra*, §IV.A.

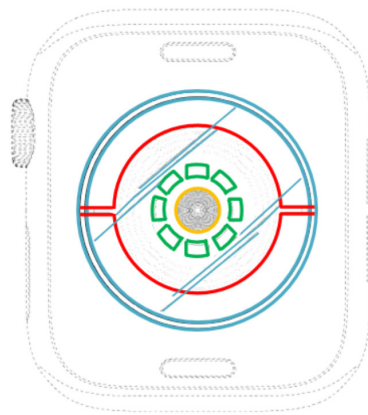


FIG. 4

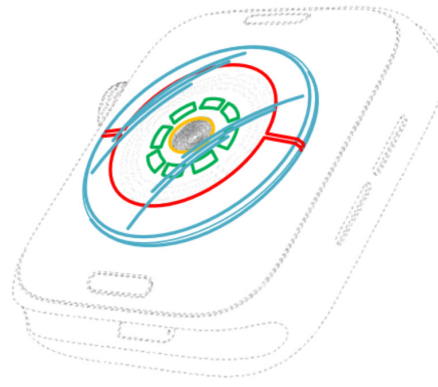


FIG. 2

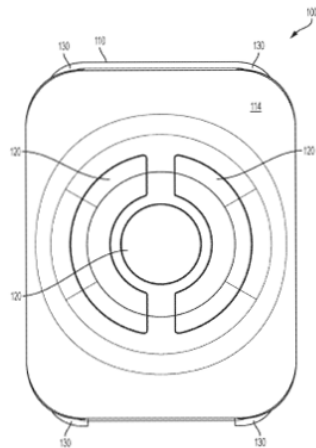


FIG. 1G

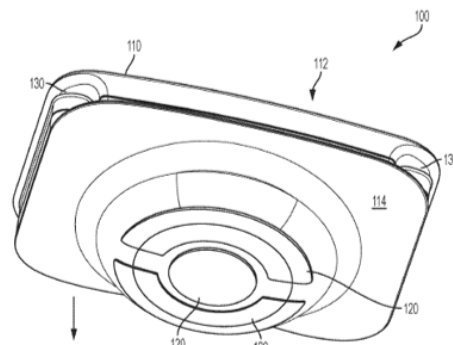


FIG. 1F

EX2001, ¶44-46 (Top: EX1001, Figs. 2 and 4 (annotated); Bottom: EX1006, Figs. 1G, 1F).

While the inner circular shape formed by multiple four-sided shapes (green) is central to the claimed design's concentric circle overall appearance, it's entirely absent from Paulke (*infra*, §IV.C.4.a). Additionally, unlike the domed appearance and continuous beveled edges of the claimed design, Paulke has a relatively planar surface on a bulbous shape extending from Paulke's housing. EX2001, ¶46. Given

these prominent differences, Paulke’s appearance is meaningfully different, and certainly not “basically the same,” compared to the claimed design.

Beyond failing to demonstrate a proper primary reference, these differences also highlight the lack of visual similarity between Paulke and Mendelson, Bushnell, and Chung that prevents the specific modifications Masimo proposes. The Petition’s Ground 1 obviousness theories are woefully deficient, and the gaps in its analysis highlight that Masimo cannot demonstrate unpatentability of the design claim based on the evidence set forth in the Petition.

1. Paulke is Not a Proper *Rosen* Reference

The Ground 1 obviousness theory is defective because the Petition fails to demonstrate that Paulke is a proper primary reference. *See* EX2001, ¶¶48-49. Masimo’s obviousness theory is based on the flawed premise that “Paulke’s differences compared to the claimed design would be that Paulke has one rectangle, not a circular array of them, and one central circle, not concentric circles.” Pet., 59. But these are not the only differences—the Petition ignores multiple, prominent differences between the claimed design and Paulke that result in meaningfully different appearances and that are certainly not “basically the same.” *Levitation Arts, Inc. v. Flyte LLC*, PGR2018-00073, Paper 14, 16-22 (PTAB, Jan. 17, 2019) (denying institution in part because “claimed design includes ornamental features that are entirely absent or significantly different in the [prior art] design”); *Dorman*

Products Inc. v. PACCAR Inc., IPR2014-00542, Paper 10 at 5 (PTAB Sept. 5, 2014) (denying institution); *In re Harvey*, 12 F.3d 1061, 1063 (Fed. Cir. 1993) (“Because major modifications would be required to make Harvey’s prior art vase look like the claimed designs, it cannot qualify as a basic design.”).

a) Masimo Fails to Properly Analyze the Inner Circular Shape Formed by the Arrangement of Four-Sided Shapes of the Claimed Design in Comparison to Paulke

Paulke lacks the claimed design’s concentric circle overall appearance flowing from the inner circular shape formed by the distinctive arrangement of elongated four-sided shapes.

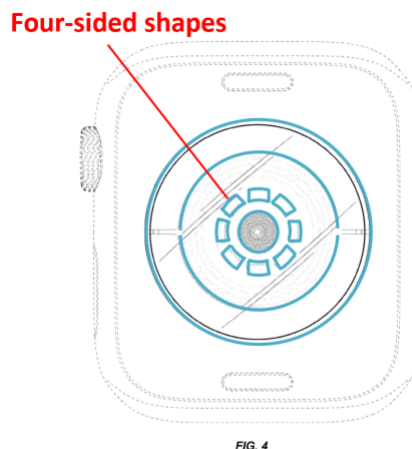
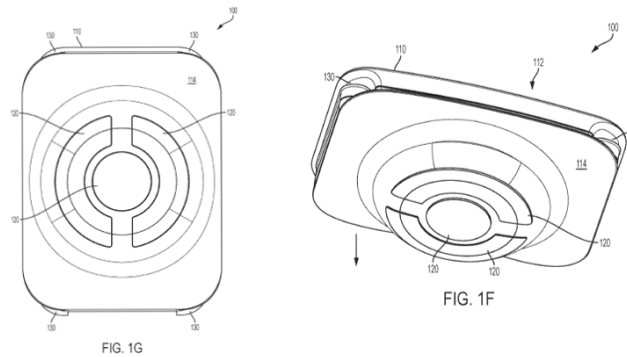


FIG. 4

EX2001, ¶50 (EX1001, Fig. 4 (annotated)).

Paulke depicts a device having a central circular component 120, entirely lacking an inner circular shape formed by an arrangement of multiple, elongated, four-sided shapes. EX1006, Fig. 1G, 1F, 5D. See EX2001, ¶¶50-60.



EX1006, Figs. 1G, 1F.

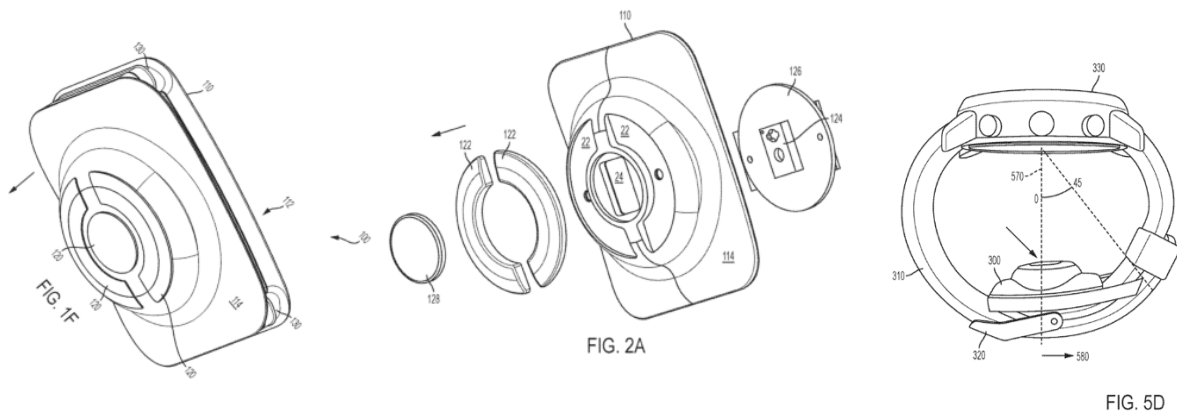
Unlike the claimed design, Paulke has a crowded appearance in which inner edges of Paulke's opposed shapes are in close proximity to its central shape—a shape that Masimo points to as comparable to the central circle of the claimed design (Pet., 58) but which leaves no room for an inner circle shape formed by an arrangement of multiple, elongated four-sided shapes. EX2001, ¶52.

Ground 1 fails to demonstrate a proper *Rosen* reference for this independent reason.

Beyond this fatal deficiency, Masimo's Ground 1 analysis of the four-sided shapes is tainted by multiple additional defects that further confirm that Paulke is not an appropriate primary reference. For example, in its hindsight attempt to recreate the claimed design, Masimo embarks on a multi-layered analysis that relies on the purported shape of an internal component of Paulke's device for a purported rectangle. Pet., 54-57. But Paulke never illustrates the purported internal component as a rectangle, and even if it were rectangle, the internal component is *never visible*

together with the external components of Paulke. *Levitation Arts*, PGR2018-00073, Paper 14 at 21 (denying institution and indicating “Petitioner does not explain how or why ‘hidden’ structures . . . that are not visible in [the prior art] design contribute to the overall visual impression”). Paulke simply lacks the combination of an outer circular shape formed by arch shapes, or any of the other features of that contribute to the appearance of the ’279 design, together with a rectangle component that is the basis for Masimo’s modification of Paulke. EX2001, ¶¶52-53.

Paulke’s Fig. 2A illustrates an exploded perspective view of the device’s internal components, illustrating that “heart rate and/or blood oxygen sensor 124” is mounted on a “board 126” within the housing beneath a “lens 128.” EX1006, 16.



EX1006, Figs. 1F (rotated), 2A, and 5D.

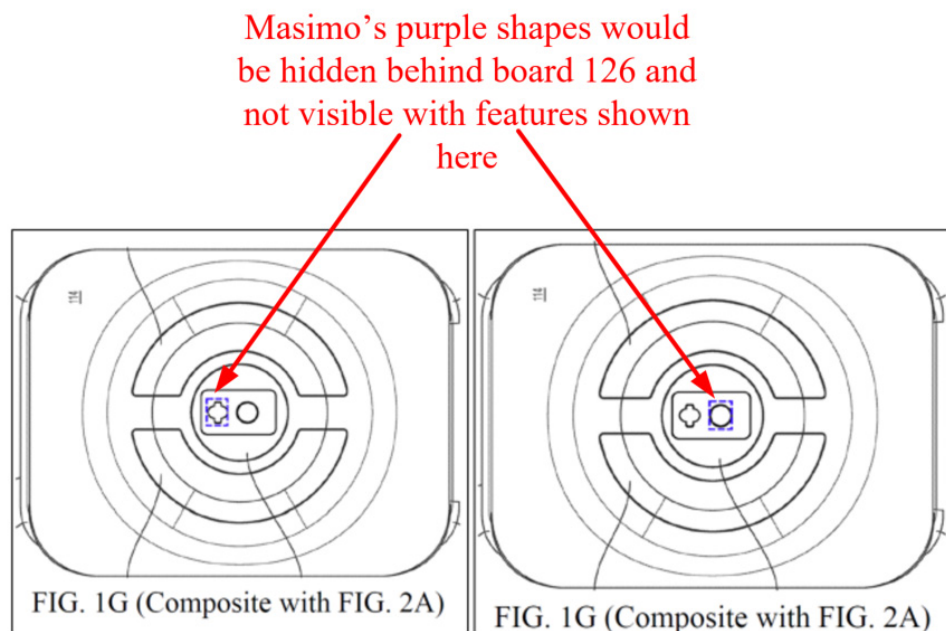
The Petition alleges that Paulke’s “sensor 124” includes “(1) a light source (e.g., LEDs), (2) at least one light detector (e.g., photodiodes), and (3) an opening to allow light to reach and be detected by the detector,” and “a DOSA would have

understood Paulke included a rectangular photodiode (blue) associated with the PPG sensor’s opening.” Pet., 55. But even if an ordinary designer would have understood Paulke as including a photodiode having a rectangle shape (which Paulke never mentions and Masimo fails to demonstrate²), Paulke’s appearance is starkly different than the claimed design. EX2001, ¶54.

First, Masimo’s analysis is fatally deficient because Masimo relies on *a single* rectangle shape—a stark contrast from the claimed design’s circular array of four-sided shapes that contributes to the overall appearance of concentric circles. EX2001, ¶59. Masimo’s theory based on a single offset rectangle (even if visible with Paulke’s other features, which it is not) simply creates a different overall appearance that lacks the claimed design’s concentric overall appearance. *Id.* The Petition is silent on this prominent difference, merely concluding “any difference in the arrangement of rectangles does not change the overall visual similarity of Paulke and claimed designs,” without evidence or explanation. Pet., 57.

² To be clear, Paulke never mentions the term “photodiode” at all, and certainly not that the photodiode would have a particular appearance alleged by Masimo.

Second, Masimo ignores that the purported rectangle is never visible with Paulke's external features. The purported photodiode, even if present, would have been *hidden behind* Paulke's depicted openings through sensor 124. EX2001, ¶¶54-57. Indeed, Masimo itself acknowledges the purpose of Paulke's depicted openings are "to allow light to reach and be detected by the detector" (Pet., 55), which is an internal component positioned behind Paulke's openings.



EX2001, ¶54 (Pet., 55 (purple annotations in Pet.; red text/arrows added))

The Petition simply ignores that the purported "rectangular photodiode" is never described or shown by Paulke as visible together with Paulke's arch portions or other exterior features. *Levitation Arts*, PGR2018-00073, Paper 14 at 21.

Third, Masimo’s theory fails to address the actual appearance depicted by Paulke that depicts *non-rectangular* shapes—a cross-shaped opening and a circle-shaped opening. EX1006, Fig. 2A; EX2001, ¶58. Nothing in Paulke depicts the contrary rectangle shapes Masimo purports to be present, or explains why a DOSA would have understood Paulke to have an appearance of a rectangular shape that deviates from Paulke’s illustrated appearance.³ *Berry Sterling Corp. v. Pescor Plastics, Inc.*, 1999 U.S. App. LEXIS 20789, *9 (C.A.F.C. 1999) (“The modifications to the primary reference cannot be such that they change the fundamental characteristics of the design.”); *see also Termax Co. v. Illinois Tool Works Inc.*, IPR2022-00106, Paper 7, 30 (PTAB, May 12, 2022) (citing *Apple, Inc. v. Samsung Elec. Co.*, 678 F.3d 1314, 1331 (Fed. Cir. 2012)).

³ To the extent Masimo relies on modification of Paulke (e.g., to have a rectangle shape visible together with external features, or to modify Paulke’s cross or circle shapes to instead have a rectangle shape) before even reaching combination with Mendelson, such a theory is based on legal error and fails to demonstrate “a single reference, *a something in existence*, the design characteristics of which are basically the same as the claimed design.” *High Point Design*, 730 F.3d at 1311 (emphasis added).

This deficiency is not remedied by Masimo's reliance on an isolated quote: "there's nothing patentable about multiple detectors." Pet., 57. Tellingly, Masimo omits the quote's context, which does not speak to the ornamental appearance of an arrangement of detectors, and certainly not the ornamental appearance of the claimed design's arrangement of four-sided shapes, in combination with other claimed features contributing to the overall appearance of the '279 design.

Paulke simply lacks the inner circular shape provided by the arrangement of multiple elongated four-sided shapes of the '279 patent, and has a markedly different appearance as a result.

b) Masimo Fails to Properly Analyze the Outer Circular Shape Formed by the Arches of the Claimed Design in Comparison to Paulke

Masimo's assertion that "the arc-shaped portions of Paulke and the D'279 Patent provide the same overall visual impression" (Pet., 49) fails to address readily visible differences that are significant to the claimed design's overall appearance. The '279 patent includes an outer circular shape formed by unified thin and elongated arches. *Supra*, §IV.A. The ends of each arch are positioned to form the unified circular appearance. EX2001, ¶¶20-27, 60-67. The thickness of the arches from the arch's inner edge to the outermost continuous circle is relatively small, contributing to the appearance of an elegant and streamlined outer circular shape.

Id.

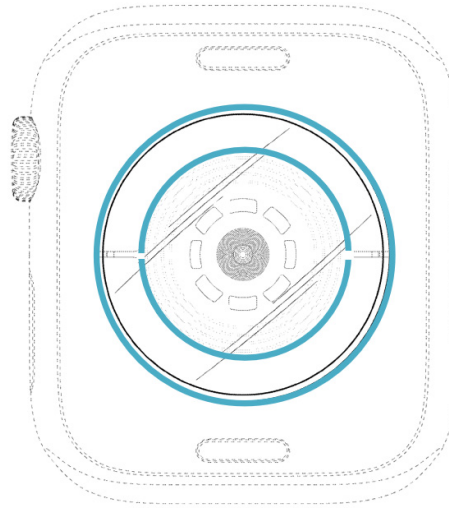


FIG. 4

EX2001, ¶63 (EX1001, Fig. 4 (annotated)).

In contrast, Paulke depicts opposed shapes spaced apart from one another and having a relatively larger thickness. Paulke's features provide an appearance of two separate, opposed shapes that differs prominently from the '279 patent's arches that evoke an overall concentric circle appearance. EX2001, ¶64.

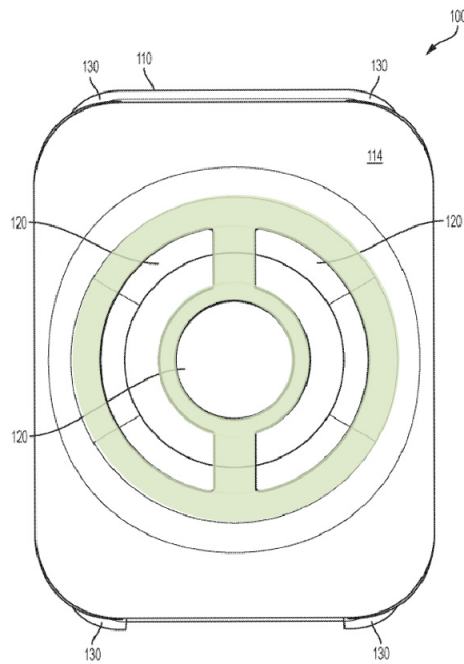


FIG. 1G

EX2001, ¶64 (EX1006, Fig. 1G (highlighted)).

Paulke's opposed shapes are meaningfully wider than the '279 patent's claimed arches, with the inner edge of Paulke's opposed shapes spaced a substantial distance inwardly (e.g., relative to radius lines depicted in Fig. 1G), and the width of Paulke's curved shapes extend across a significant portion of Paulke's sensor body surface. These prominently visible features provide a different overall appearance that is bulky and dominated by the opposed curved shapes, providing a crowded appearance rather than the '279 patent's streamlined, elegant concentric circle appearance. EX2001, ¶65. Indeed, Masimo compares Paulke's feature 120 to the central circle of the '279 design (Pet., 58), but in doing so ignores that the crowded

appearance leaves no room for the inner circle shape provided by the arrangement of elongated four-sided shapes of the '279 design.

Masimo acknowledges “Paulke’s arc-shaped portions are spaced slightly farther apart than the claimed design” but merely concludes “that difference, or any difference in the size, shape or spacing of the arc-shaped portions of Paulke and the claimed design, does not alter the overall visual similarity of these designs.” Pet., 50. Critically, Masimo never addresses the contribution of these features on the claimed design’s overall appearance, ignoring the visual appearance of the claimed design’s concentric circles that is lacking from Paulke’s opposed “arc-shaped” components. This is not a matter of degree—Paulke’s opposed shapes have the appearance of two separate features rather than the '279 patent’s unified circular appearance of the arches. EX2001, ¶¶66-67.

The Petition cites paragraph 63 of the Delman Declaration, but this paragraph parrots the petition without any additional underlying explanation. *Compare* EX1003, 63 *with* Pet., 49-50. Such an “*ipse dixit* declaration” is insufficient and does nothing to remedy the Petition’s deficient analysis. *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1362-64 (Fed. Cir. 2019) (refusing to give weight to petitioner’s “*ipse dixit* declaration”).

**c) Masimo Fails to Properly Analyze the Beveled Edge
Protruding Outward From the Outermost Continuous
Circle and the Domed Appearance**

Masimo's comparison of Paulke with the claimed design is premised on a reconstruction of Paulke that directly contradicts Paulke's actual appearance. The colored image on page 53 of the Petition is not a figure from Paulke, but rather Masimo's proposal as to what the exploded image might look like when assembled. Critically, however, Masimo ignores that Paulke already shows an assembled view, which lacks Masimo's artificially-added protruding edges. Simply put, the protruding edge is Masimo's creation, and is not depicted in Paulke's Figs. 1G and 1F.

Masimo's altered drawing is contradicted by
Paulke's actual appearance

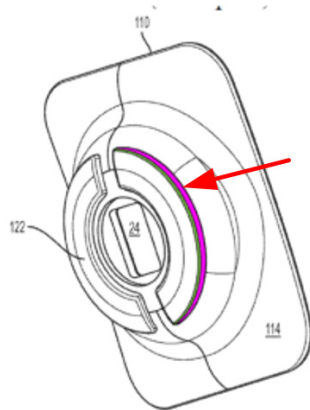
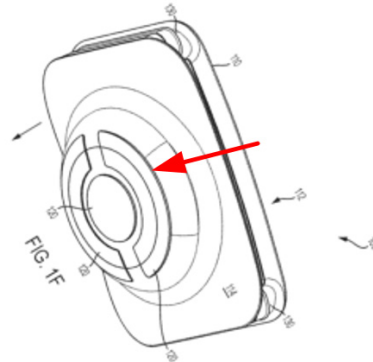


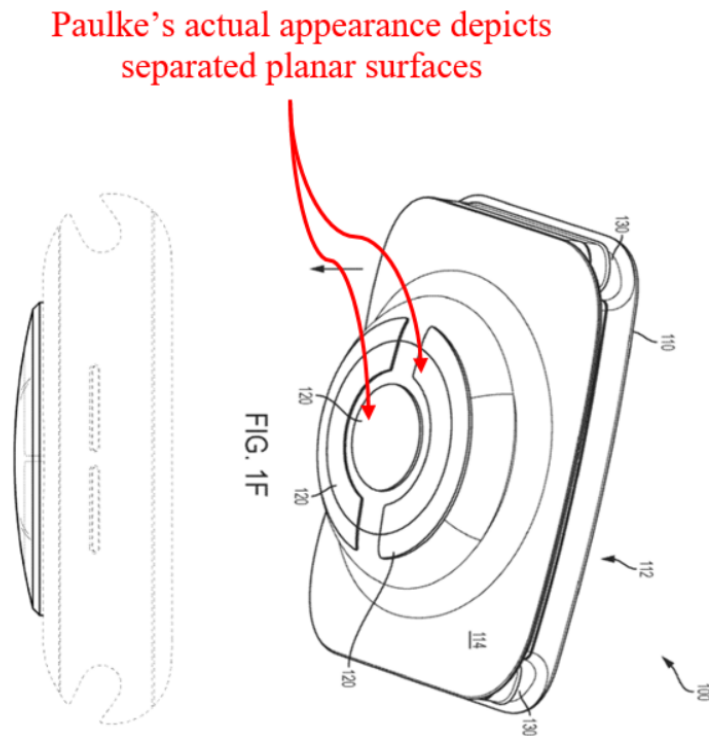
FIG. 2A (assembled, excerpted)⁴



EX2001, ¶68 (Left: Petition's altered drawing (Pet., 53); Right: EX1006, FIG. 1F (red text/arrows added)).

Even if Paulke depicted the appearance of Masimo's modified assembly (which Masimo fails to demonstrate), it lacks the continuous circular bevel that extends around the entire circumference of the claimed design. Indeed, Masimo's modifications highlight the distinct, opposed appearance of Paulke's shapes that lack the unified circle appearance of the claimed design. EX2001, ¶69.

Masimo also fails to address the domed appearance of the '279 patent. Masimo's red annotations are belied by Paulke itself, which includes a flat central sensor component, and gaps that provide an uneven surface appearance—starkly contrasting with Masimo's red annotation, and that lack the profile and domed appearance of the claimed design.



EX2001, ¶70 (Left: EX1001, FIG. 5; Right: EX1006, FIG. 1F (annotated)).

Masimo itself indicates that “the *separate protruding shapes of Paulke’s design create a jagged, uneven appearance on the back of Paulke’s device*,” providing a very different appearance than the profile and domed appearance of the ’279 patent. Pet., 69 (emphasis added).

d) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches and Other Features of the Claimed Design in Comparison to Paulke

The Petition fails to address the claimed design’s outermost continuous circle, and its contribution to the overall appearance, in its Ground 1 analysis. Masimo

further fails to address the differences between Paulke's design and the claimed design's relationship between the outermost continuous circle and outer circular shape formed by the spaced-apart elongated arch shapes. *Id.*

The outermost continuous circle encompasses each of the other features of the claimed design and sets the tone of its concentric circular overall impression. EX2001, ¶¶71-72. For example, the claimed design's outermost continuous circle (annotated "A" below) surrounds the outer circular shape formed by the arches and the inner circular shape formed by the four-sided shapes. It provides a visual continuity that is mimicked by the assemblies of shapes arranged within the outermost continuous circle. The outermost continuous circle thus meaningfully contributes to the claimed design's appearance as a series of concentric circles evoking a target, bulls-eye or ripples in a pond. EX2001, ¶67.

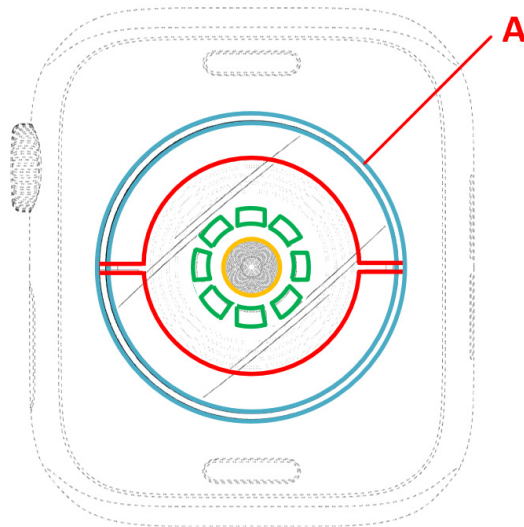


FIG. 4

EX2001, ¶72 (EX1001, Fig. 4 (annotated)).

The Petition's annotations of Paulke ignore this aspect, which do not depict such an outermost continuous circle near its opposed shapes. EX2001, ¶¶73-75.

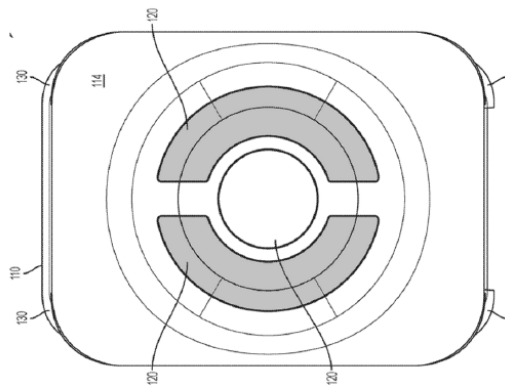


FIG. 1G (rotated)

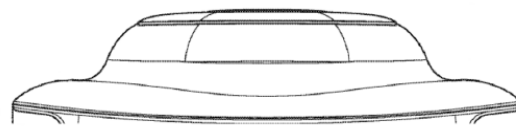
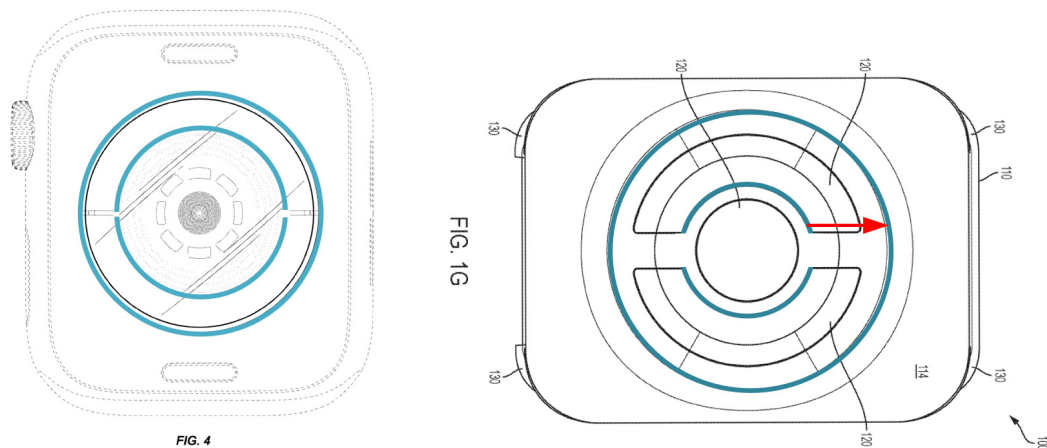


FIG. 1D (rotated)

Pet., 48, 50 (EX1006, FIGS. 1G, 1D).

Moreover, Masimo ignores the specific appearance provided by the relationship between the outermost continuous circle and the inner and outer circular shapes provided by the arches and multiple four-sided shapes, respectively. For example, Masimo neglects to address the position of the outermost continuous circle relative to the inner edge of the outer circular shape formed by the arch-shapes, and further relative to the outer edge of the inner circular shape formed by the four-sided shapes, which are spaced from the other to highlight the elegant circles of decreasing size. Paulke not only lacks the appearance flowing from these aspects of the claimed design, but has a crowded appearance in which its feature 120 is very close to inner edges of its opposed shapes, not even allowing for an inner circle shape provided by an arrangement of four-sided shapes.

Additionally, in the claimed design, the small thickness of the outer circular shape provided by the arches relative to the diameter of the outermost continuous circle contributes to an overall appearance as an elegant and streamlined series of concentric circles, rather than a bulky assembly of shapes. Masimo here again ignores these readily apparent features. EX2001, ¶¶75-76.

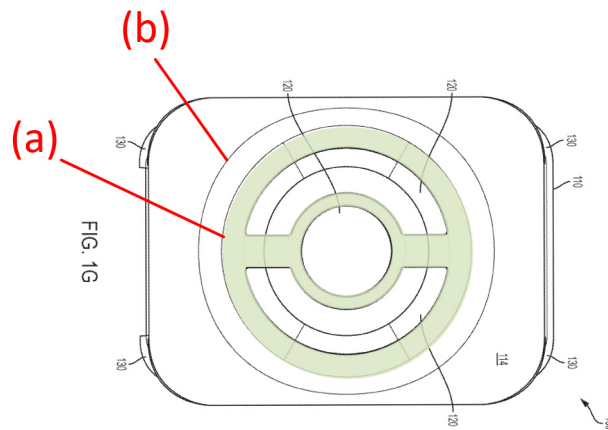


EX2001, ¶76 (Left: EX2001, Fig. 4 (annotated); Right: EX1004, Fig. 1G (rotated, annotated)).

The Petition never specifically addresses this aspect of the claimed design and its contribution to the overall appearance. In contrast to the claimed design, Paulke's opposed shapes have a much thicker appearance. EX2001, ¶76. Paulke's opposed shapes are bulky and take up a significant amount of space in Paulke's design, contributing to a crowded appearance (e.g., between the opposed shapes) rather than the '279 patent's streamlined appearance. *Id.*

To be clear, the Petition does not specifically identify an outermost continuous circle in Paulke at all – the lines in Paulke appear to depict radius lines showing changes in slope of the edges of a raised portion, and at least in the case of the outermost line, are oval rather than circular in shape. EX2001, ¶¶77-78. To the extent Masimo relies on radius lines in Paulke's drawing (which the Petition never mentions), Paulke's opposed shapes are spaced inwardly significantly from both the

intermediate (a) and outer (b) lines, here again conveying a different overall appearance that lacks the claimed design's streamlined, well-proportioned appearance. Moreover, the Petition ignores that Paulke's outer line is not a circle at all, instead slightly depressed inwardly such that it has an elliptical or oval shape. EX1006, FIGS. 1D and 1G.



EX2001, ¶77 (EX1004, Fig. 1G (rotated, annotations and highlighting added)).

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Paulke in View of Mendelson, Bushnell, and Chung To Create the Claimed Design

a) Mendelson and Chung are Not Proper Secondary References for Combination with Paulke

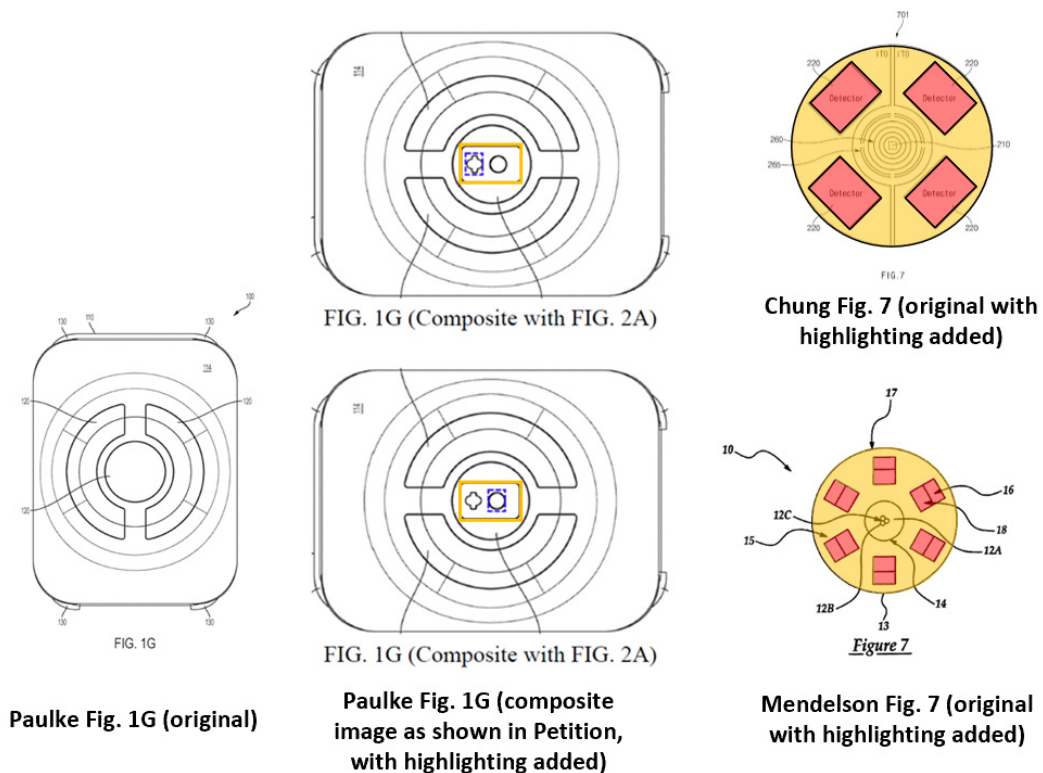
Masimo's focus on Paulke and Mendelson as providing a sensor fails to demonstrate that Mendelson's design is "so related" to Paulke in *appearance* that Mendelson is a proper secondary reference. EX2001, ¶¶79-83. "The question in design cases is not whether the references sought to be combined are in analogous

arts in the mechanical sense,” but rather whether the appearance of the references is “so related” that the “appearance of certain ornamental features in one would suggest application of those features to the other.” *In re Glavas*, 230 F.2d 447, 450 (C.C.P.A. 1956); *see also Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than ornamental appearance).

Masimo relies on Paulke’s central circular biosensor 120 and Mendelson’s and Chung’s circularly-shaped sensors as evidence that Mendelson and Chung are “so related” to Paulke’s design. Pet., 60 (“Mendelson and Chung are so related to Paulke *because they disclose suitable sensors* for Paulke’s design” and “Paulke expressly suggests combining its sensor design with a suitable PPG sensor.”). In doing so, Masimo improperly focuses on Mendelson’s *use* as a sensor rather than the visual *appearance* of Mendelson and Paulke. *In re Sung Nam Cho*, 813 F.2d 378, 382 (Fed. Cir. 1987) (reversing Board’s obviousness determination that analyzed design patent “as if it were the subject of an application for a utility patent”) (“[a]lthough it may have been obvious, from a utility stand point, to place cylindrical depressions in crown type caps and to include flaps in the depressions, it does not follow that Cho’s design was obvious”); *Termax*, IPR2022-00106, Paper 7 at 29.

When properly focusing on appearance instead of use, Mendelson and Chung have little in common with Paulke. In contrast to Mendelson’s arrangement of pairs of rectangles and Chung’s arrangement of four rectangles, Paulke altogether lacks

the rectangular shape. Likewise, Mendelson and Chung lack any relationship between its pairs of rectangles and surrounding opposed arc shapes—the Petition identifies no such features in Mendelson or Chung, and there are none.



EX2001, ¶80 (EX1006 Fig. 1G; Pet., 55 (EX1006, Fig. 1G); EX1011, Fig. 7 (annotated), EX1010, Fig. 7 (annotated)).

Masimo’s reliance on the presence of a “circular biosensor” in Paulke and “circular shape” in Mendelson and Chung is alone insufficient to demonstrate Paulke and Mendelson are “so related” as to suggest application of Mendelson’s arrangement of rectangle shapes into Paulke in view of the remainder of the respective designs. Paulke describes a circular shape with a single elongate shape

centered therein, and two non-symmetrical offset apertures of different, non-rectangular shapes (a cross shape and a circle shape). In contrast, Mendelson depicts an outer circular shape surrounding a radially symmetrical array of rectangles aligned in lines bisecting a central circle, and Chung depicts an arrangement of four rectangles positioned opposite one another from inner arc shapes. EX2001, ¶¶80-82.

To be clear, the mere presence of a circle is insufficient to suggest application of Mendelson’s “sensor design” (Pet., 63) and Chung’s “Fresnel lens” (Pet., 73) to Paulke, except for improper use of the claimed design as a roadmap. *Premier Gem*, IPR2016-00434, Paper 9 at 16; *L.A. Gear, Inc. v. Thom McAn Shoe Co.*, 988 F.2d 1117, 1124 (Fed. Cir. 1993) (“Not only the individual elements, but the ornamental quality of the combination must be suggested in the prior art. . . . A reconstruction of known elements does not invalidate a design patent, absent some basis whereby a designer of ordinary skill would be led to create this particular design.” (emphasis added)). Masimo’s proposed combination improperly selects isolated components from each of Paulke, Mendelson, Bushnell, and Chung, ignoring the actual appearance of these designs and without explanation as to why its specific combination of isolated features would have been suggested to the DOSA. This is insufficient.

This hindsight reasoning employed by Masimo becomes even more egregious as additional modifications to the Paulke/Mendelson/Bushnell/Chung combination are layered on beyond the depictions of Paulke, Mendelson, Bushnell, and Chung.

b) Masimo’s Proposed Series of Modifications Beyond the Design Depicted in Mendelson are Improper

Masimo acknowledges multiple additional modifications are necessary to provide features of the ’279 patent beyond that depicted by Paulke/Mendelson/Bushnell/Chung, tacitly acknowledging that modifying Paulke based on these references fails to achieve the claimed design. *See, e.g.*, Pet., 67-68 (modify Mendelson to use “one array” of photodiodes instead of pairs, and to have “curved rectangles”); 74 (“extend the ends of the arc-shaped electrodes,” electrodes “shaped to avoid interference,” “chamfered edges.” But these additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶¶84-87. The proposed modifications fail for this additional reason.

For example, Masimo’s assertion that “the difference between the claimed photodiode shapes (curved rectangles) and those in Mendelson (straight rectangles 16/18) was a change known in the art,” fails to demonstrate that such a change would have been considered trivial by a DOSA, and that a DOSA would have further modified the proposed Paulke/Mendelson/Bushnell/Chung combination to achieve

the claimed design’s specific appearance. First, the Petition fails to provide any prior art evidence of “curved rectangles” having the specific appearance proposed by the Petition. The Petition does not rely on Paulke, Mendelson, Bushnell, or Chung for this modification, none of which depict such a feature.

Second, even if “curved rectangles” was a “change known in the art” (which Masimo fails to demonstrate with prior art evidence), the Federal Circuit has made clear that mere knowledge of a shape is insufficient:

If we adopted the logic of the Board and concluded that the substitution of the Carder shapes for those in the Harvey prior art case would render the ’904 and ’906 design applications obvious *just because the Carder shapes were well-known and frequently used in vase designs*, each and every prior art bowl or vase shape ever publicly disclosed would render obvious any generally similar vase shape. Clearly, *this cannot be the case*.

Harvey, 12 F.3d at 1065 (emphasis added).

Third, Masimo’s assertions that a DOSA would have created curved edges “to visually parallel the corresponding curvatures of Paulke’s . . . arc-shaped portions and the sensor’s overall circular shape and” to “provide a visually consistent, simplistic, and appealing look of concentric circles” ignores that *both* Mendelson and Chung already includes an outer circle shape yet utilizes rectangle shapes *without* curved edges. Pet., 67. In other words, the purported reason for modifying Mendelson’s rectangles to have curved edges—to complement curved lines of Paulke—ignores that Mendelson and Chung already include a curved outer shape in

combination with straight edges. Mendelson and Chung thus each undermine Masimo's proffered reasons for this modification. *See Termax*, IPR2022-00106, Paper 7 at 30 ("the notably consistent symmetrical nature of both designs would not suggest that a skilled designer would destroy that symmetry by using a rounded platform with a rectangular platform." (citing *Apple*, 678 F.3d at 1331)). Masimo's proposed modification and motivation to do so is unsupported and fatally deficient.

The deficiencies discussed above are not remedied by Masimo's reliance on purported utility motivations. The teachings of references can properly be combined in a design patent context if they are so related that the *appearance* of certain ornamental features in one reference would have suggested application of those features to another. When determining obviousness of a design patent claim, "the focus must be on appearances and not uses." *See Harvey*, 12 F.3d at 1064 (reversing Board's obviousness determination where "the Board improperly mixed principles of obviousness for utility patents with those for ornamental design patents."); *In re Sung Nam Cho*, 813 F.2d at 382 (reversing Board's obviousness determination that analyzed design patent "as if it were the subject of an application for a utility patent"); *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner's reliance on aspects other than ornamental appearance, and indicating "the Federal Circuit has made clear that the motivation to modify one design with another is limited to whether the articles are 'so related' (*i.e., so similar in appearance*)").

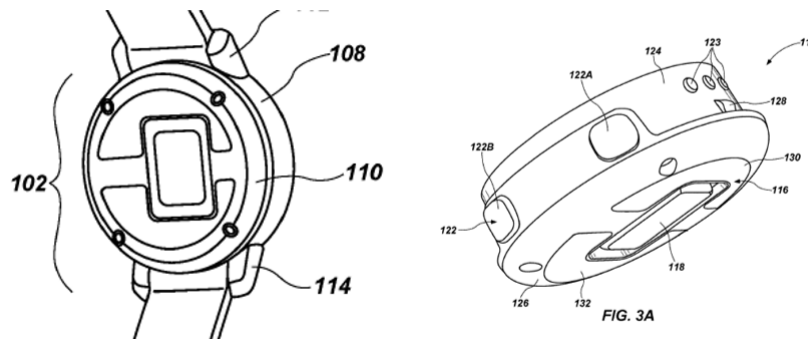
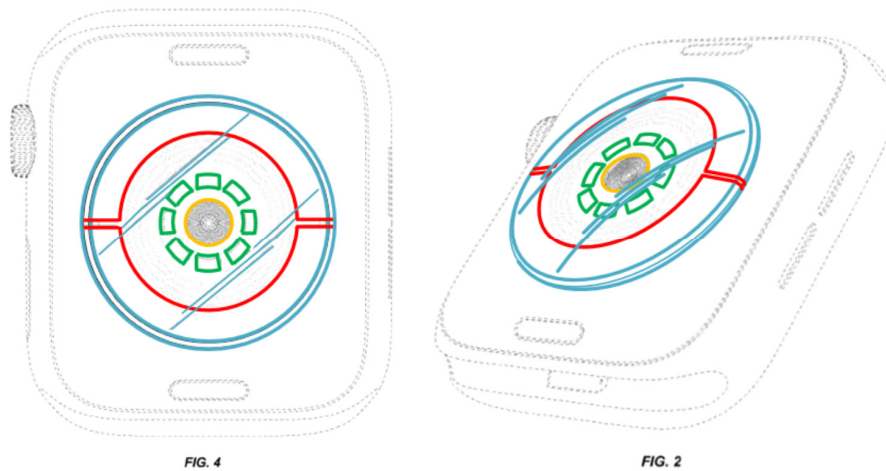
Masimo ignores this well-established principle of design patent law, embarking on a multi-layered series of modifications based on purported utility considerations. Pet., 65-74. As one example, Masimo’s assertion that “rather than use both of Mendelson’s six-photodiode arrays with Paulke as shown above, a DOSA alternatively would have been motivated to use one array, as shown below,” is unsupported by any aspect related to the appearance of the photodiode array. Pet., 66. This deficiency is not remedied by Masimo’s purported motivation to “improve the performance of the PPG” (and which is also contrary to Mendelson’s explicit teachings of utilizing “far” and “near” detectors). *Id.*; *see also* EX1011, 9:26-34, 13:19-22. Moreover, even presuming a DOSA would have been motivated to make the device “cheaper and easier” (which Masimo fails to demonstrate), Masimo fails to demonstrate such a motivation would have led to the particular ornamental appearance that it proposes. *See Termax*, IPR2022-00106, Paper 7 at 29.

Masimo’s multiple modifications beyond the Mendelson designs—and the tortured logic required to support such modifications—is improper. Masimo’s obviousness analysis in Ground 1 is fatally deficient for at least these reasons.

D. Ground 2: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Yuen in View of Mendelson, Bushnell, and Chung

Ground 2 is fatally flawed because the Petition fails to demonstrate that Yuen is a proper primary reference. While the inner circular shape formed by multiple

four-sided shapes, and the protruding circular element with a beveled edge protruding outward from an outermost continuous circle and having a domed appearance, are central to the overall appearance of the claimed design, any similar aspects are entirely lacking from Yuen.



EX2001, ¶¶88-89 (Top: EX1001, Figs. 2 and 4 (annotated)); Bottom: EX1007, Figs. 1B (excerpted) and 3A).

Yuen entirely lacks the appearance of concentric rings suggesting a bulls-eye or ripples in a pond. Given this prominent difference, Masimo fails to demonstrate that Yuen has an appearance that is “basically the same,” or similar at all, compared

to the claimed design. The obviousness analysis can end here. *See, e.g., Vitro Packaging*, IPR2015-00947, Paper 13 (“we need not reach the second step of the obviousness analysis”).

Moreover, the Petition relies on layers of modifications based on a four-way combination, along with yet additional modifications not depicted by the references, that significantly change Yuen’s appearance, in an attempt to recreate the claimed design. The gaps in the Petition’s analysis highlight that Masimo cannot demonstrate unpatentability of the design claim based on the evidence set forth in the Petition.

1. Yuen is Not a Proper *Rosen* Reference

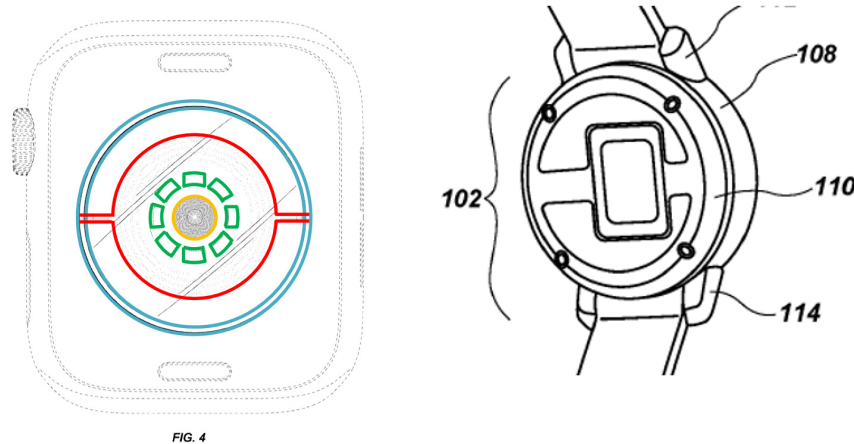
Masimo’s obviousness theory is based on the flawed premise that “any differences between Yuen and the D’279 patent do not change the designs’ overall visual similarity.” Pet., 77. In making this assumption, Masimo fails to address the vastly different overall appearance provided by Yuen in comparison to the claimed design. *See* EX2001, ¶90. Yuen entirely lacks an inner circular shape formed by an arrangement of multiple elongated four-sided shapes, and the protruding circular element with a beveled edge protruding outward from an outermost continuous circle and having a domed appearance, and lacks the contribution of such features to the claimed design’s overall appearance. Additionally, Masimo does not address the differences between Yuen’s asymmetric and squarish opposed shapes that provide a

markedly different overall appearance from the '279 patent's outer circular shape. The Petition also fails to address additional prominent differences between the claimed design and Yuen, such as the relationship between the claimed design's outer circular shape formed by the arrangement of elongated arch shapes within an outermost continuous circle, that together with the inner circular shape provide a concentric circular appearance. These differences between Yuen and the claimed design result in an overall appearance that is asymmetrical and bulky as opposed to the claimed design's appearance of sleek and balanced concentric circles and its protruding circular element having a domed appearance. Each of these differences are enough to independently disqualify Yuen as a proper primary reference because of the significantly different overall appearance that results from these features. *See Levitation Arts*, PGR2018-00073, Paper 14 at 16-22; *Dorman Products*, IPR2014-00542, Paper 10 at 5; *In re Harvey*, 12 F.3d at 1063.

a) Masimo Fails to Properly Analyze the Inner Circular Shape Formed by the Arrangement of Four-Sided Shapes of the Claimed Design in Comparison to Yuen

Yuen lacks the claimed design's distinctive inner circular shape formed by an arrangement of four-sided shapes, and the claimed design's resulting concentric circle overall appearance. Masimo does not identify an inner circular shape or even a single four-sided shape arranged to form such an inner circular shape in Yuen's design. Indeed, Yuen's design completely omits any inner circular shape formed by

elongated four-sided shapes and lacks any impression of concentric circles provided by the '279 patent. *See* EX2001, ¶¶91-98.



EX2001, ¶90 (EX1001, Fig. 4 (annotated)); EX1007, Figs. 1B (excerpted)).

Yuen depicts a rear face of a device having an offset sensor component, and describes that “PPG sensor 118 may include any PPG sensor 118 known in the art” EX1007, Fig. 1B; [0032]; *see also* [0041] (“PPG sensor 118”); Pet., 82. From this terse description, Masimo extrapolates “a DOSA would have understood Yuen’s PPG sensor included at least one rectangular photodiode.” Pet., 83. But nothing in Yuen specifically mentions a photodiode, much less a photodiode having the specific shape that Masimo annotates in Fig. 4 below.

Masimo relies on
appearance of added
rectangle that is not shown
or described by Yuen

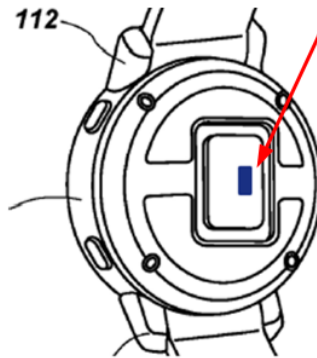


FIG. 4 (Composite)

EX2001, ¶¶95 (Pet., 84 (blue rectangle added by Petition to EX1007, Fig. 4, red arrow and text added)).⁴

Even if an ordinary designer would have understood Yuen as including a photodiode having a rectangle shape (which Yuen never mentions and Masimo fails to demonstrate), Masimo’s analysis is fatally deficient because Masimo relies on the appearance of *a single offset rectangle*. Here again, Masimo ignores that a single offset rectangle has a different appearance that lacks the claimed design’s concentric circular arrangement of four-sided shapes that forms an inner circular shape and contributes to the overall concentric circular appearance. EX2001, ¶¶94-96. The

⁴ Masimo describes its figure as a “Composite” but does not specify what Yuen’s image is composited with to produce the image.

Petition is silent on this prominent difference, merely concluding that though “Yuen differs from the claimed design because Yuen only includes the one rectangle above... Yuen remains an appropriate primary reference,” without evidence or explanation.⁵ *See*, Pet., 84. This is insufficient to meet its burden.

Additionally, Masimo ignores that the purported “rectangular photodiode” is not visible together with Yuen’s external features because, if present at all, it would be an internal component isolated from any aesthetic appearance of the external components. *See Levitation Arts*, PGR2018-00073, Paper 14 at 21.

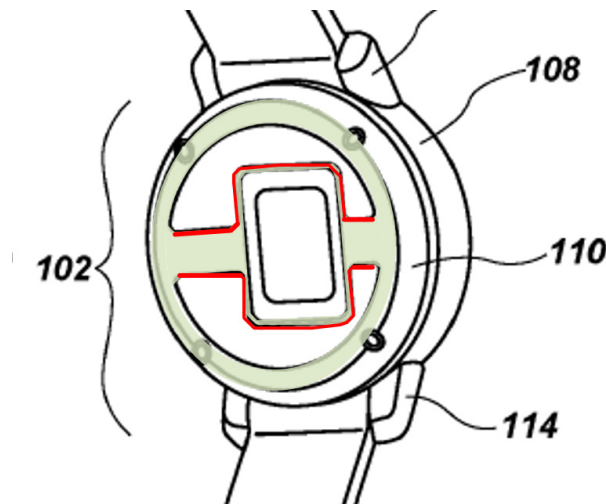
Yuen’s complete lack of an inner circular shape provided by the arrangement of multiple elongated four-sided shapes highlights that Yuen has a different appearance and is not a proper primary reference. Accordingly, Ground 2 fails. EX2001, ¶¶96-98.

⁵ This is not remedied by the bare assertion that Yuen remains an appropriate primary reference “for the same reasons discussed above regarding Paulke,” which does not address Yuen’s appearance and which are likewise unsupported by any evidence or explanation.

b) Masimo Fails to Properly Analyze the Outer Circular Shape Formed by the Arches of the Claimed Design in Comparison to Yuen

In contrast to the '279 patent's design, Yuen depicts asymmetrical, squarish shapes that are spaced apart from one another in an opposed relationship. These features provide an immediately apparent overall appearance different from the claimed design's appearance of concentric circles resulting from the outer circular shape provided by the arches. EX2001, ¶¶99-104.

Yuen's opposed shapes are *asymmetrical*. For example, the left side of the shapes is notably wider than the right side of the shapes (e.g., as shown in FIG. 1B).

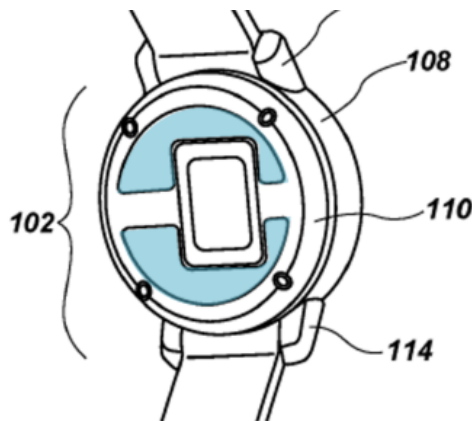


EX2001, ¶100 (EX1007, Fig. 1B (excerpted, annotated)).

The asymmetric appearance is not just a result of the perspective shown in Fig. 1B—Masimo admits elsewhere in the Petition that Yuen's shapes are asymmetric. *See*, Pet., 91 (“Yuen's asymmetrically located PPG sensor”). EX2001, ¶¶101-102.

Additionally, Yuen's opposed shapes are not arch-shaped but instead have a square, off-center cut-out. The inner edge of the opposed shapes are not curved or circular at all, and certainly do not evoke an appearance of concentric circles.

As yet a further prominent difference, Yuen's features provide an appearance of two separate, opposed shapes. EX2001, ¶103. Yuen's shapes are meaningfully wider than the claimed design's elongated thin arch elements, and the ends of Yuen's shapes are separated by a relatively large gap. These prominently visible features provide a different overall appearance that is bulky and dominated by the opposed shapes, providing a crowded overall appearance rather than the '279 patent's streamlined, elegant concentric circle appearance. The Petition's Ground 2 analysis ignores these aspects of the claimed design, and the differing appearance of Yuen's shapes.



EX2001, ¶103 (EX1007, Fig. 1B (excerpted, annotated)).

The above deficiencies are not remedied by Masimo’s acknowledgement that “Yuen’s arc-shaped portions have a slightly different shape and spacing than in the claimed design.” Pet., 80. Masimo merely concludes “that difference, or any difference in the size, shape, or spacing of the arc-shaped portions of Yuen and the claimed design, does not alter the overall visual similarity of these designs,” without following this assertion with any analysis of these differences or why they purportedly do not alter the overall visual appearance. *Id.* Here again, Masimo never addresses the contribution of these prominent features to the claimed design’s overall appearance, ignoring the visual appearance of the claimed design’s concentric circles that is lacking from Yuen’s squarish shapes. These differences are not a mere matter of degree—Yuen’s opposed shapes are asymmetric and squarish, immediately contrasting with the ’279 patent’s arches and its overall appearance of concentric circles. EX2001, ¶104.

c) Masimo Fails to Properly Analyze the Domed Appearance and the Beveled Edge Protruding Outward From the Outermost Continuous Circle

Masimo’s assertion that Yuen has basically the same overall visual impression is based on the false assertion that “Yuen’s design differs only slightly because it has a curved edge . . . instead of vertical and chamfered edges.” Pet., 81. But this assertion overlooks the readily-apparent planar profile of Yuen’s design, which lacks the domed appearance of the claimed design. Contrary to

Masimo's annotations, Yuen depicts a curved outer profile that transitions to distinctly planar regions that occupy the majority of the face.

The Petition ignores Yuen's readily-apparent planar shapes that occupy the bulk of Yuen's rear face

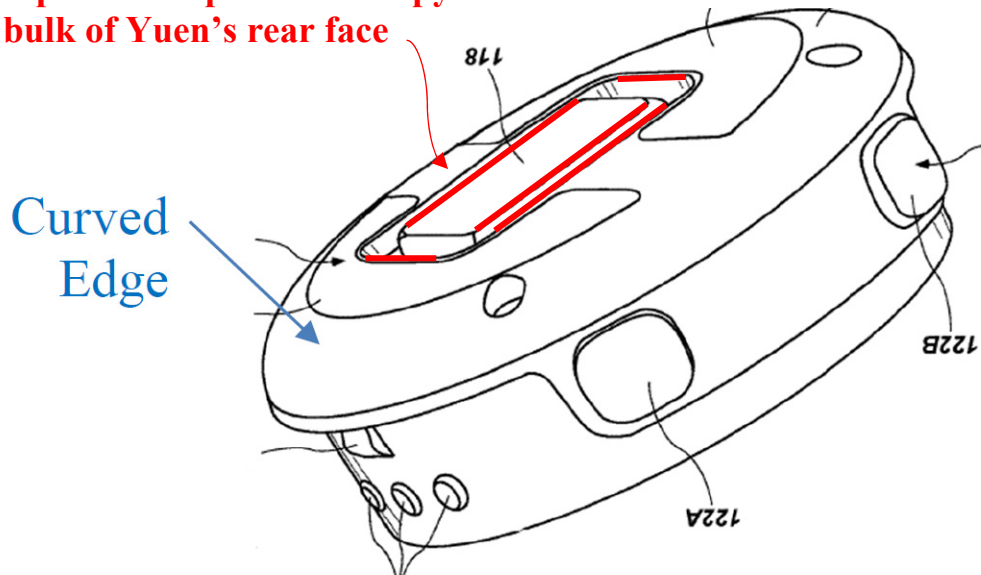


FIG. 3A (rotated)

EX2001, ¶¶105-106 (Pet., 82 (citing EX1007, FIG. 3A) (annotated)).

Masimo's annotations at page 81 ignore Yuen's actual profile, alleging a continuous convex shape that is simply not depicted by Yuen. *See*, Pet., 81 (annotating Yuen, FIG. 3A with a curved line that does not follow Yuen's actual shape).

Masimo's Ground 2 analysis ignores this readily visible aspect of Yuen. Masimo's reliance on Yuen as a primary reference is based on a shape that Yuen simply does not depict.

As to the beveled edge, Masimo’s acknowledges that Yuen lacks this aspect of the claimed design, but merely assumes—*without any explanation or evidence*—that “any differences between the design of Yuen and the claimed design would not prevent Yuen’s use as a primary reference.” Pet., 82; EX2001, ¶107. Such a conclusory assertion is insufficient to satisfy its burden.

d) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches and Other Features of the Claimed Design in Comparison to Yuen

Masimo’s obviousness theory ignores the different overall appearance flowing from the claimed design’s outermost continuous circle, and the relationship between the outermost continuous circle and the outer circular shape provided by the spaced-apart elongated arches formed within the outermost continuous circle. *Supra*, §IV.A. As described above, the outermost continuous circle encompasses the other features of the claimed design and sets the tone of the concentric circular overall impression. *See supra* §IV.A; EX2001, ¶¶20-27, 107.

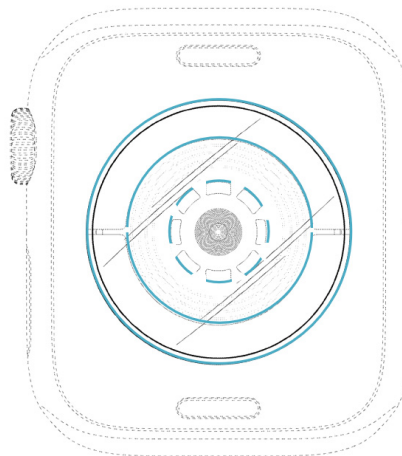


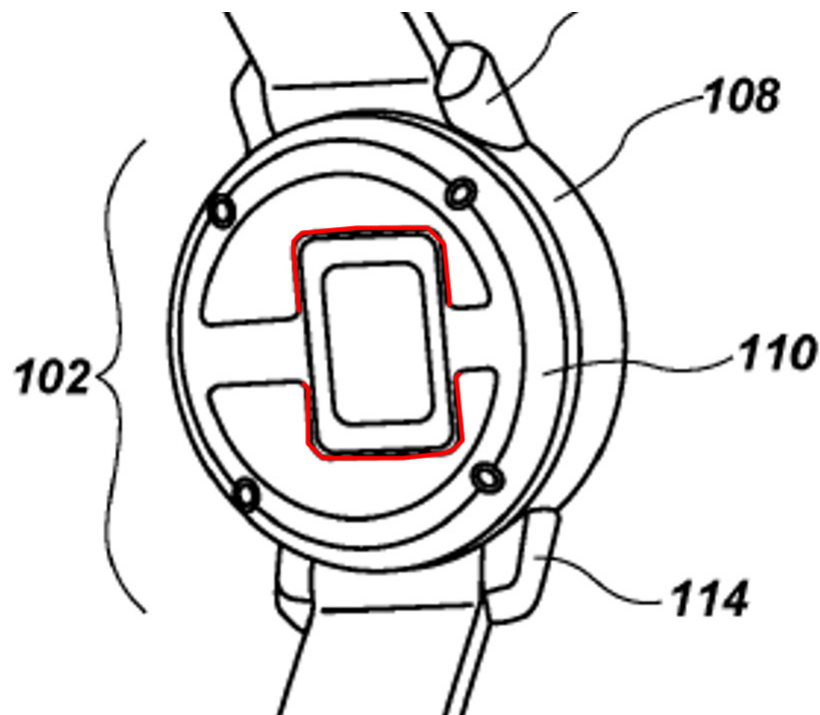
FIG. 4

EX2001, ¶107 (EX1001, Fig. 4).

The Petition's analysis of Ground 2 is silent as to this outermost continuous circle shape and its contribution to the claimed design's overall appearance. The Petition ignores that Yuen lacks the outermost continuous circle altogether, instead depicting a line showing the change in slope of the raised element and the device's back, and as a result, Yuen also lacks the overall impression of the '279 patent's design. EX2001, ¶108.

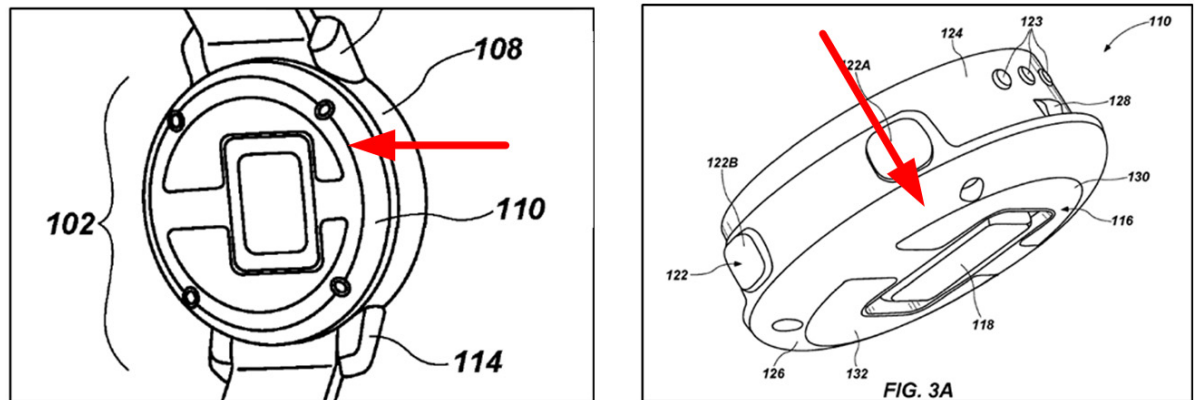
Additionally, Masimo neglects to address the position of the outermost continuous circle relative to the inner edges of the arches, and further relative to the outer edges of the inner circular shape formed by the four-sided shapes. While the claimed design's outermost continuous circle and inner edge of the arches are spaced to provide a streamlined, elegant appearance of circles of decreasing size, Yuen

depicts thick, squarish, asymmetric opposed shapes that entirely lack a ring-like appearance.



EX2001, ¶108 (EX1007, Fig. 4 (excerpted, annotated to highlight squarish inner edge of opposed shapes)).

Masimo also fails to address the claimed design’s relationship between the outer circular shape formed by the arches and the size of the outermost continuous circle (e.g., the “thickness” of the arches). *See supra* §IV.A; EX2001, ¶¶100-102. The small thickness relative to the diameter of the outermost continuous circle contributes to the claimed design’s overall appearance as an elegant series of concentric circles, rather than a bulky assembly of shapes having a thicker and imprecise appearance.



EX2001, ¶109 (EX1007, Figs. 1B and 3A (excerpted, annotated)).

To the extent Masimo relies on the line delineating the back face of the watch in Fig. 1B (which the Petition never mentions), Yuen's Fig. 3A confirms that this line merely represents curvature of the watch's rear surface. Additionally, Yuen's opposed shapes are spaced inwardly significantly from this line, here again conveying a different overall appearance that lacks the claimed design's streamlined, well-proportioned appearance. EX2001, ¶110.

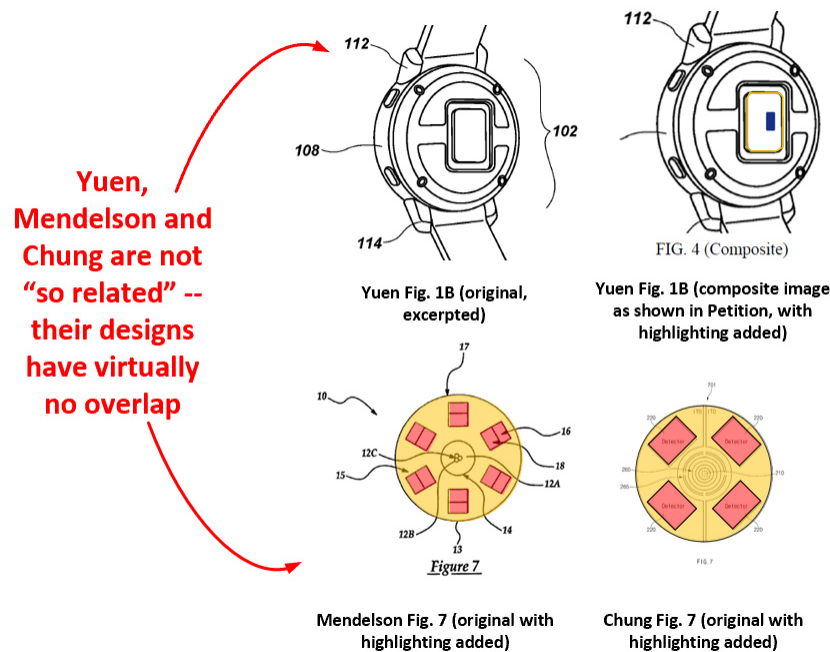
Because the Petition has failed to provide any explanation that accounts for these visible differences, Masimo has not demonstrated that Yuen is a proper primary reference. *See High Point Design*, 730 F.3d at 1314; *Harvey*, 12 F.3d at 1063.

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Yuen in View of Mendelson, Bushnell, and Chung To Create the Claimed Design

a) Mendelson and Chung Are Not Proper Secondary References for Combination with Yuen

The Petition fails to demonstrate that Mendelson’s and Chung’s sensor designs are “so related” to Yuen that “the appearance” of certain ornamental features in Mendelson or Chung would suggest the application of those features to Yuen. *Glavas*, 230 F.2d at 450.

Masimo relies on Yuen’s description that its device can include “any PPG sensor [] known in the art” and Mendelson’s sensor as evidence that Mendelson and Chung are “so related” to Yuen’s design. Pet., 87 (“Mendelson and Chung are so related to Yuen because they disclose suitable PPG sensors for Yuen’s design”). In doing so, Masimo improperly focuses on Mendelson’s use as a sensor rather than the visual appearances of Mendelson and Chung compared to Yuen. *Termax*, IPR2022-00106, Paper 7 at 29. In contrast to Mendelson’s arrangement of pairs of rectangles, Yuen lacks any corresponding rectangular shape whatsoever. EX2001, ¶¶111-112. Likewise, while Mendelson has a circular perimeter shape and radially-symmetric rectangle arrangement, Yuen has a squarish arrangement between opposed, asymmetric shapes. *Id.*



EX2001, ¶¶112 (EX1007, Fig. 1B (excerpted); EX1007, Fig. 1B as modified in Petition p. 83 (annotated); EX1011, Fig. 7 (annotated), EX1010, Fig. 7 (annotated)).

Mendelson’s appearance, having a radial arrangement of rectangles surrounding a central circular shape, lacks any features similar to Yuen, having an elongate central shape (yellow). EX2001, ¶¶112-113. Masimo never specifically addresses these prominent differences, and thus fails to satisfy its burden of demonstrating the references are “so related that the appearance of certain ornamental features in one would suggest the application of those features to the other.” *Glavas*, 230 F.2d at 450.

To be clear, Masimo’s reliance on the presence of a “PPG sensor” in Yuen and “suitable PPG sensors” in Mendelson and Chung is alone insufficient to

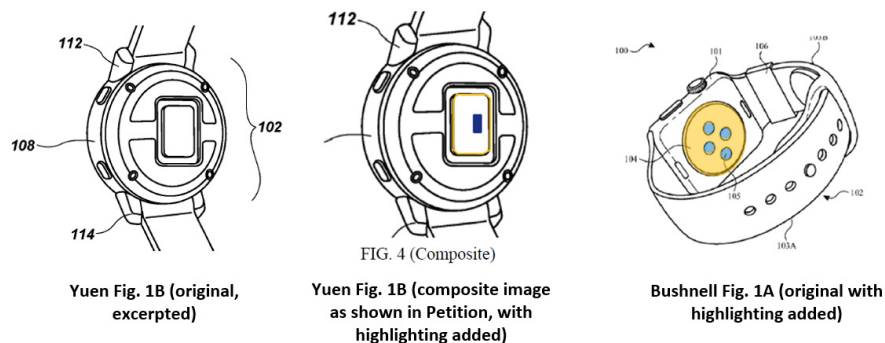
demonstrate Yuen and Mendelson are “so related.” Pet., 87. Nothing in Mendelson’s or Chung’s symmetrical radial arrangement suggests application to Yuen’s offset/asymmetrical sensor, and the mere presence of a space in Yuen’s design described as providing the function/use of a sensor is insufficient to suggest application of Mendelson’s or Chung’s specific ornamental appearance, except for improper use of the claimed design as a roadmap. *Premier Gem*, IPR2016-00434, Paper 9 at 16; *L.A. Gear*, 988 F.2d at 1124. Accordingly, Masimo has failed to demonstrate that Mendelson and Chung are appropriate secondary references.

b) Bushnell is Not a Proper Secondary Reference for Combination with Yuen

The Petition ignores readily apparent differences of Bushnell’s design compared to Yuen, which highlight that the references are not “so related that the appearance of certain ornamental features in one would suggest the application of those features to the other.” *Glavas*, 230 F.2d at 450. Masimo fails to demonstrate any suggestion in the designs’ appearances to incorporate Bushnell’s features into Yuen’s design.

Bushnell’s rear face has a circular feature protruding from the center of a generally squarish body. *See* EX1009, Figs. 1A, 2A. Unlike Bushnell, Yuen’s rear face is circular with a curved portion at the *outer perimeter edge* and regions to the interior that are relatively flat. *See* EX1007, Fig. 3A.

Further, as illustrated below, Bushnell’s rear wristwatch face does not include visual elements similar to Yuen’s opposed, asymmetrical shapes and offset rectangular portion. EX2001, ¶¶114-115.



EX2001, ¶115 (EX1007, Fig. 1B (excerpted); Pet. 83 (EX1007, Fig. 1B as modified in Pet. (annotated); EX1009, Fig. 1A (annotated)).

The above deficiencies are not remedied by Masimo’s assertion that “Bushnell is so related to Yuen because it discloses a suitable design for Yuen’s device,” and “both references concern a circular convex surface that protrudes from the back of the wrist-worn device and incorporates the devices sensors.” Pet., 89. Contrary to Masimo’s characterization, Yuen’s alleged “circular convex surface” does not protrude from the back surface, but rather *is* the back of the wrist-worn device. EX2001, ¶116. Masimo further asserts “the designs are related because Yuen suggests using any known PPG sensor ... which Bushnell discloses.” Pet., 90. As described above with regard to Mendelson and Chung, Masimo’s reliance on the presence of a PPG sensor, and any components of such a sensor, fail to demonstrate

the *appearance* of Yuen and Bushnell are “so related” as to suggest application of Bushnell’s protruding surface to Yuen. *Supra*, §IV.D.2.a; *Termax*, IPR2022-00106, Paper 7 at 29. Here again, the prominent differences in appearance, with almost no visual similarity, confirm the improper hindsight nature of Masimo’s analysis. *L.A. Gear*, 988 F.2d at 1124. Accordingly, Masimo has failed to demonstrate that Bushnell is an appropriate secondary reference.

c) Masimo’s Proposed Series of Modifications Beyond the Designs Depicted in Mendelson, Bushnell, and Chung are Improper

Masimo acknowledges multiple additional modifications are necessary to provide the features of the ’279 patent beyond that depicted by Yuen/Mendelson/Bushnell/Chung, tacitly acknowledging that the proposed combination fails to achieve the claimed design. Pet., 91-93(“one of Mendelson’s six-photodiode arrays”, and to have “curved rectangle-shaped photodiodes”). But these additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶¶117-121. The proposed modification fails for this additional reason. *See Harvey*, 12 F.3d at 1065.

For example, Masimo’s assertion that “the differences between the six straight rectangle-shaped photodiodes shown above and the claimed design (eight curved rectangle-shaped photodiodes) are changes that a DOSA would have been motivated to make” (Pet., 92), fails to demonstrate that such a change would have been

considered trivial by a DOSA, and that a DOSA would have further modified the proposed Yuen/Mendelson/Bushnell/Chung combination to achieve the claimed design's specific appearance.

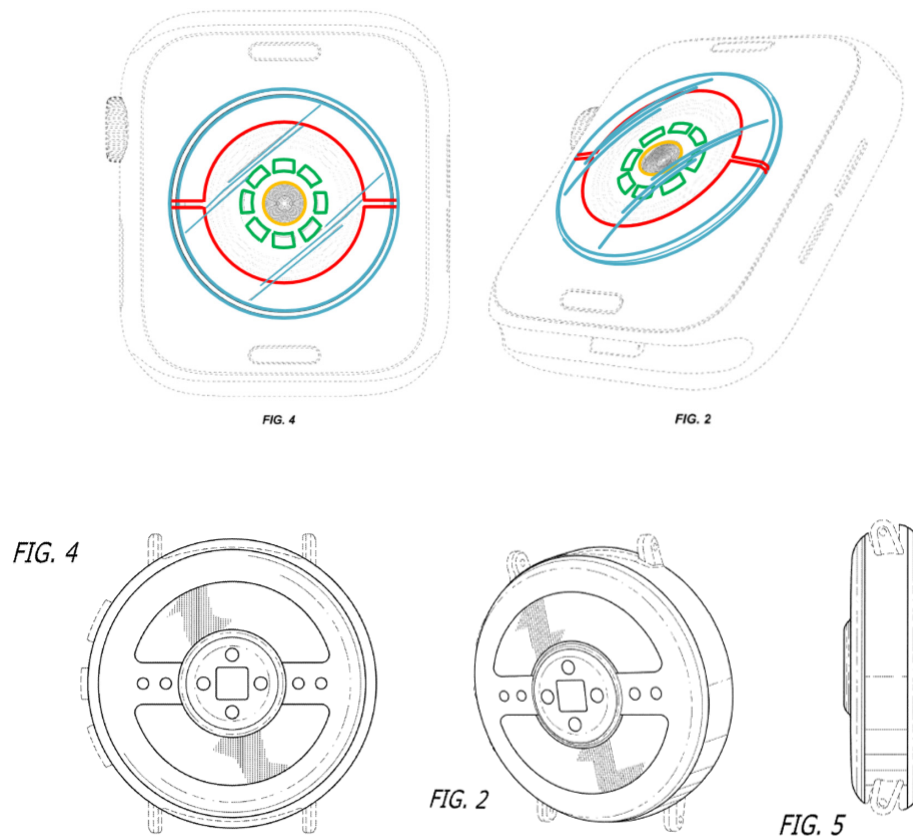
As described above, Masimo fails to provide evidence that “curved rectangles” were known in the prior art, and even if the shape were known, this is not sufficient to support Masimo's modification beyond what is shown in the Yuen, Mendelson and Bushnell references. *Supra* §IV.C.5.b. Further, Masimo's purported reasons for modifying the rectangular arrangement of the Yuen/Mendelson/Bushnell/Chung combination are not suggested by the appearance of the references, but instead depart from the specific designs depicted in the references. *Id.*

The Petition's analysis is further undermined by the internal shape delineated by the inner edges of Yuen's opposed shapes, which do not form a curved or circular shape, but rather a rectangular shape. Puzzlingly, Masimo contends Mendelson's and Chung's sensors “have a circular shape especially suited for the available area between Yuen's arc-shaped electrodes.” Pet., 87. Yuen, however, clearly lacks any such area having a circular shape similar to Mendelson or Chung. EX2001, ¶119.

E. Ground 3: Masimo Fails to Demonstrate that the Claimed Design is Obvious Based on Fong in View of Mendelson, Bushnell, and Chung

Ground 3 is fatally flawed because the Petition fails to demonstrate that Fong is a proper *Rosen* reference. From there, the Petition relies on multiple layers of modifications based on a four-way combination, along with yet additional modifications not based on features depicted in the references at all, in an attempt to recreate the claimed design. Each of these deficiencies highlight that the Petition is insufficient to demonstrate a reasonable likelihood of unpatentability.

As described above, the '279 patent depicts a design having a streamlined appearance of multiple concentric circles including, in part, a protruding circular element with a beveled edge protruding outward from an outermost continuous circle (blue), an outer circular shape formed by thin, elongated arches positioned within the outermost continuous circle (red), and an inner circular shape formed by an arrangement of multiple elongated four-sided shapes (green). *See* EX1001, Figs. 1-9.



EX2001, ¶¶122-123 (Top: EX1001, Figs. 2 and 4 (annotated); Bottom: EX1008, Figs. 4, 2, and 5).

While the inner circular shape formed by multiple four-sided shapes is central to the claimed design’s concentric circle overall appearance, any similar aspect is entirely lacking from Fong. Instead, Fong depicts centrally arranged square and diamond shapes. Additionally, unlike the domed appearance and continuous beveled edges of the claimed design, Fong has a stepped surface of relatively planar region. Given these prominent differences, and their impact on overall appearance, Fong’s appearance is meaningfully different, and certainly not “basically the same” as the claimed design.

Beyond failing to demonstrate a proper primary reference, these differences also highlight the lack of visual similarity between Fong and Mendelson, Bushnell, and Chung that prevents the specific modifications Masimo proposes. Additionally, the Petition relies on layers of modifications that significantly change Fong's appearance, and that are not depicted by Fong, Mendelson, Bushnell, or Chung to recreate the claimed design. The Petition's Ground 1 obviousness theories are deficient, and the gaps in its analysis highlight that Masimo cannot demonstrate unpatentability of the design claim based on the evidence set forth in the Petition.

1. Fong is Not a Proper *Rosen* Reference

Masimo's obviousness theory is based on the flawed premise that "Fong's only differences from the claimed design would be that Fong's circular array has four circles instead of eight rectangles, and Fong has curved edges." Pet., 105. But in making this assertion, the Petition ignores many aspects of Fong that contribute to a vastly different appearance in comparison to the claimed design. *See* EX2001, ¶124. Masimo fails to specifically address significant aspects of Fong, such as Fong's lack of an inner circular shape formed by an arrangement of elongated four-sided shapes, Fong's profile that lacks a domed appearance or continuous beveled edge protruding outward from the outermost continuous circle, and Fong's spacing between the opposed shapes that include a row of interposed circular elements separating the opposed shapes, each of which yields a markedly different overall

appearance. Moreover, the Petition fails to address additional prominent differences between the claimed design and Fong, such as the relationship in the claimed design between the arches that form an outer circular shape and the outermost continuous circle. Masimo's assumption that Fong is "basically the same" despite these differences is based on multiple factual and legal errors. The prominent differences between Fong and the claimed design, some of which are wholly unaddressed by the Petition, confirm that Fong has a markedly different appearance, and that the Petition fails to demonstrate Fong is a "single reference that creates basically the same visual impression." *Levitation Arts*, PGR2018-00073, Paper 14, 16-22; *Dorman Products*, IPR2014-00542, Paper 10 at 5; *Harvey*, 12 F.3d at 1063.

a) Masimo Fails to Properly Analyze the Inner Circular Shape Formed by the Arrangement of Four-Sided Shapes of the Claimed Design in Comparison to Fong

As discussed above, the claimed design includes an inner circular shape formed by the arrangement of multiple elongated four-sided shapes forming which contributes to the concentric circle appearance that evokes a bullseye or ripples in a pond. *Supra*, §IV.A.

Four-sided shapes

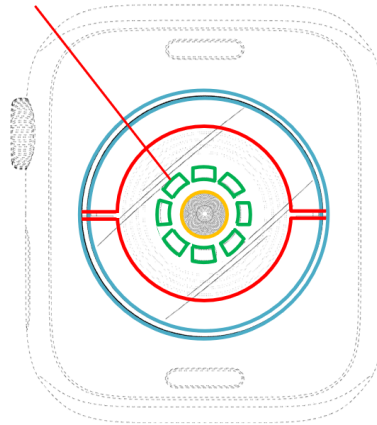
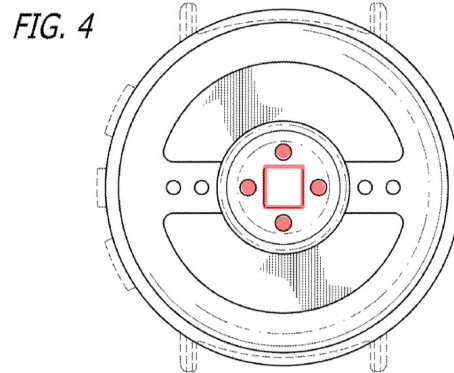


FIG. 4

EX2001, ¶125 (EX1001, Fig. 4 (annotated)).

Masimo relies on the central square in Fong’s design as providing “one or more central rectangles,” and its four circles (red) as providing a purported “circular array.” Pet., 102-103. But Masimo ignores aspects of Fong that render it significantly different than the claimed design’s circular arrangement of four-sided shapes, and lacks any explanation or evidence to support its conclusory assertion that Fong’s appearance is basically the same despite these conspicuous differences.



EX2001, ¶126 (EX1008, Fig. 4 (highlighting added)).

Masimo merely assumes that, if the '279 patent's circular arrangement of four-sided shapes is included within the claimed scope, "Fong remains an appropriate primary reference for the same reasons discussed above regarding Paulke." Pet., 103. Such a bare conclusion that lacks any comparison of Fong's four circles and the claimed design—not followed by the requisite analysis—fails to satisfy Masimo's burden. Instead, these features highlight fundamental differences compared to the claimed design—circle shapes positioned around a central square in a diamond arrangement. EX2001, ¶127.

The Petition cites paragraphs 117-120 of the Delman Declaration, but these paragraphs parrot the petition without any additional underlying explanation. Compare EX1003, ¶¶120-122 with Pet., 101-103. Such an "*ipse dixit* declaration" is insufficient and does nothing to remedy the Petition's deficient analysis. *TQ Delta*, 942 F.3d at 1362-64.

To be clear, Fong's four circles give the impression not of a circular array but of a diamond-shaped configuration. EX2001, ¶127. The diamond-shaped appearance is emphasized by the positioning of the four circles along flat edges of the central square. *Id.* Moreover, Fong's circles lack an elongate shape that do not extend towards one another, further emphasizing the lack of a circular appearance. *Id.* Masimo never addresses the appearance conveyed by Fong's four circles positioned along flat edges of a square, which do not suggest an inner circular shape in their arrangement. Fong lacks the inner circular shape provided by the arrangement of multiple elongated four-sided shapes of the '279 patent, and Fong's central design provides a meaningfully different appearance that contrasts with the '279 patent's overall appearance.

b) Masimo Fails to Properly Analyze the Outer Circular Shape Formed by the Arches of the Claimed Design in Comparison to Fong

As discussed above, the claimed design includes an outer circular shape formed by an arrangement of unified thin, elongated arch shapes that contribute to the '279 design's overall appearance of well-proportioned concentric circles. *Supra*, §IV.A.

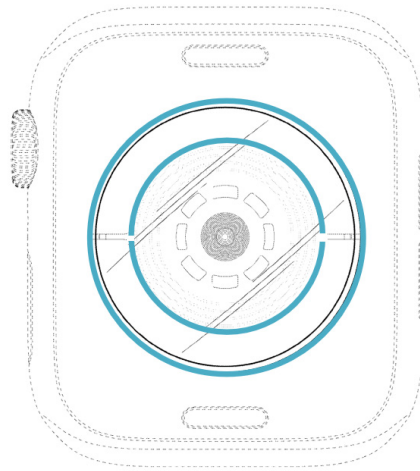
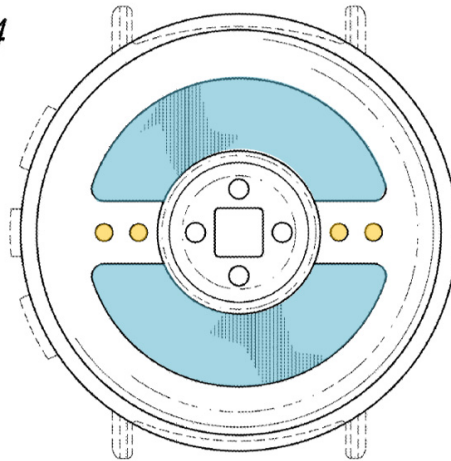


FIG. 4

EX2001, ¶129 (EX1001, Fig. 4 (annotated)).

In contrast to the '279 patent's design, Fong depicts wide, opposed shapes (below, blue) separated from one another at the ends by a significant gap that provides an appearance of opposed, divided shapes. EX2001, ¶¶128-129. Moreover, this separation is visually highlighted by the presence of multiple circular elements (yellow). In particular, two circular elements are positioned between each end of the opposed shapes (e.g., as shown in Fig. 4). These circular elements are significant to Fong's appearance, aligned with two additional circular elements and the central square. Together, the circular elements and central square extend across the entire width of the opposed shapes and visually divides the design into upper and lower portions (blue) separated by a middle row of the circle and square elements. EX2001, ¶¶128-130.

FIG. 4



EX2001, ¶¶128 (EX1008, Fig. 4 (highlighting added)).

Far from the claimed design's unified, outer circular shape, Fong's round elements separating ends of the two opposed shapes highlight the distinct and opposed appearance of Fong's shapes. EX2001, ¶128.

The differences in Fong's visual appearance compared to the '279 patent are not a mere matter of degree. Fong's opposed shapes are spaced apart from one another not only by a large space, but by additional elements interposed in this space that are significant to Fong's different appearance. EX2001, ¶¶128-131. Masimo fails to specifically address these aspects of Fong.

To be clear, this significant difference in Fong's appearance is not remedied by any further modification. Masimo never even proposes modification based on the appearance of Mendelson, Bushnell, or Chung to somehow alter this aspect of

Fong to achieve the claimed appearance, none of which depict an outer circle provided by arch shapes at all. Fong's design has a significantly different appearance due to the band of elements extending across the middle of the face, and Masimo never specifically addresses it.

Accordingly, Fong is not a proper primary reference and Masimo's analysis is fatally deficient for this independent reason.

c) Masimo Fails to Properly Analyze the Domed Appearance and the Beveled Edge Protruding Outward From the Outermost Continuous Circle

Masimo's conclusion that Fong has basically the same overall visual impression is based on the unsupported assertion that "a DOSA would have understood that Fong's design includes a convex surface." Pet., 100. Critically, however, this bare assertion is unsupported by any explanation or evidence, and is belied by the appearance of Fong itself. Unlike the profile of the claimed design, Fong depicts planar surfaces separated by a step. EX2001, ¶133.

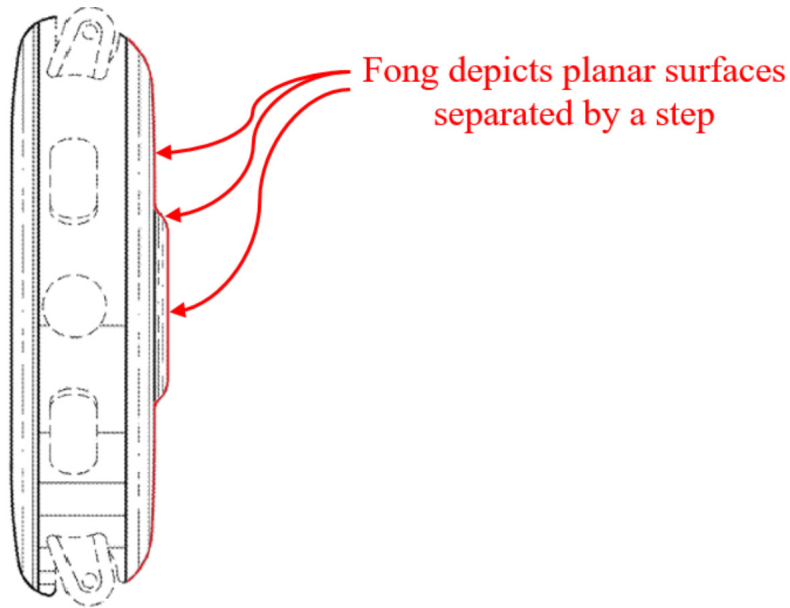


FIG. 6

EX2001, ¶133 (Pet., 100 (citing EX1008, FIG. 6)(annotated)).

This difference is not insignificant—the planar surfaces separated by a step extend over the majority of the rear face of Fong’s device and provide a markedly different impression than the domed appearance that results from the claimed design’s profile. EX2001, ¶134. The Petition ignores it, merely asserting that “any differences between Fong and the claimed design do not prevent Fong’s use as a primary reference.” Pet., 101.

The Petition notes that Fong lacks the beveled edge of the claimed design, but never offers any reason that Fong’s appearance is basically the same as the claimed design despite this prominently visible difference. Indeed, Fong’s curved perimeter edge is not an isolated difference, but contributes to the stepped profile

and complements the step to the central planar surface in proportion and shape.

EX2001, ¶135.

Ultimately, Masimo's conclusory assertions—unsupported by any explanation or evidence that Fong's appearance is basically the same despite these prominent differences—here again demonstrate the Petition is insufficient to satisfy Masimo's burden.

d) Masimo Fails to Properly Analyze the Outermost Continuous Circle and Its Relationship with the Arches and Other Features of the Claimed Design in Comparison to Fong

The Petition fails to address the outermost continuous circle in its comparison to Fong, never identifying such a feature in Fong at all. Likewise, the Petition does not address Fong's different overall appearance that lacks the series of continuous and concentric circles of decreasing size, suggesting a target or bulls-eye provided by the '279 patent.

Fong's design includes opposed shapes surrounding a raised circular central portion, and lacks any continuous outer circle proximate Fong's opposed shapes.

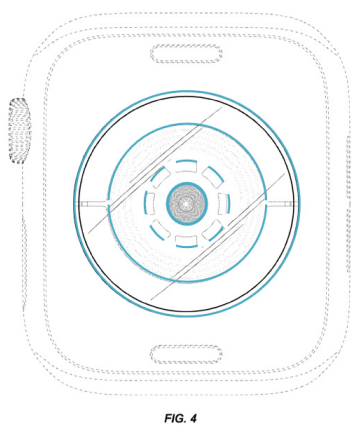


FIG. 4

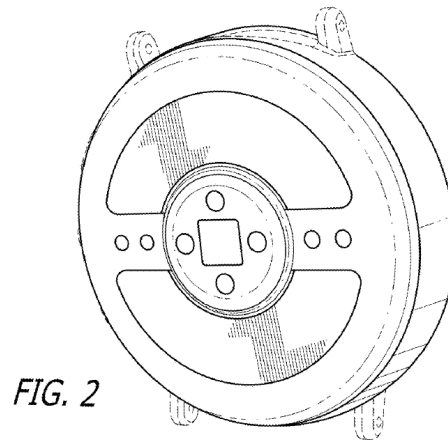


FIG. 2

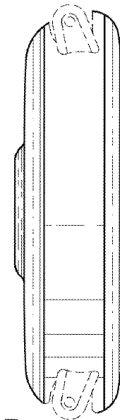


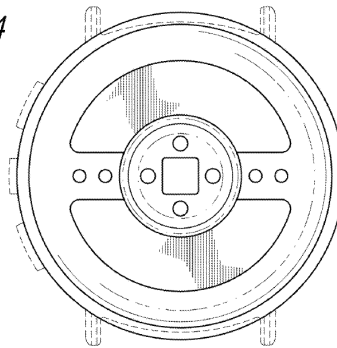
FIG. 5

EX2001, ¶¶136-138 (EX1001, Fig. 4 (annotated)); EX1008, Figs. 2 and 5.

The lack of outermost continuous circle in Fong's design is not trivial or *de minimis*—it goes to a fundamental aspect of Fong in which top and bottom portions are divided by a central portion that includes a row of small circles and a central square that extend across the device's back. EX2001, ¶¶139-140. Unlike the claimed design, Fong's opposed features are visibly separated and not encompassed by a closely-proximate outermost continuous circle. *Id.*

Additionally, the Petition ignores the claimed design's position of the outermost continuous circle relative to the inner edge of the arches and to the outer edge of the four-sided shapes. In contrast, Fong's opposed shapes have a much thicker appearance, and Fong altogether lacks an outermost continuous circle in close proximity to the opposed shapes. EX2001, ¶140

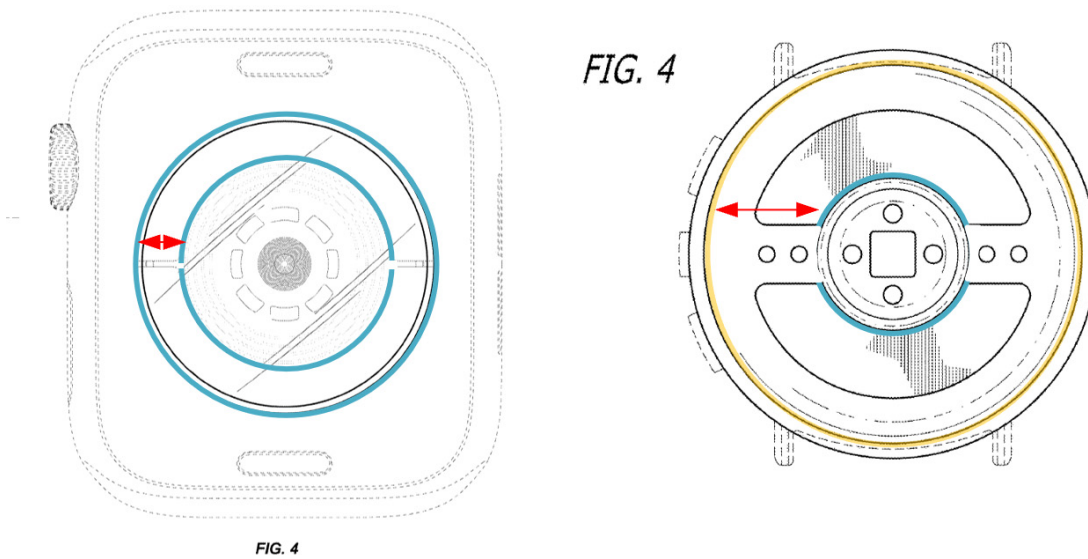
FIG. 4



EX1008, Fig. 4.

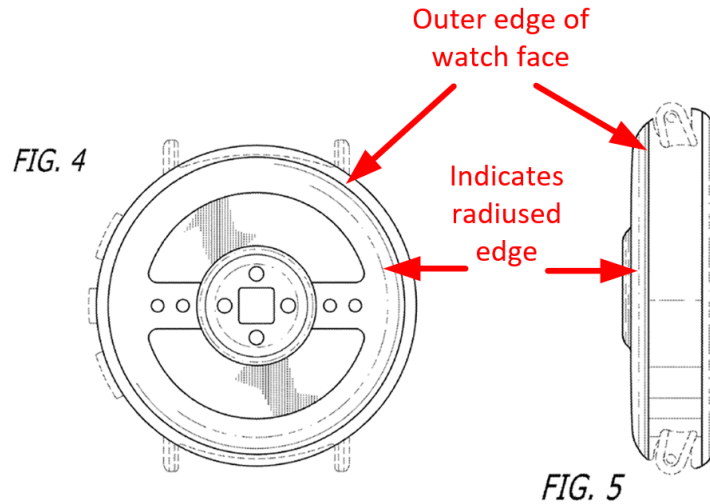
While Masimo compares the outer perimeter “curved edge” of Fong with the beveled edge of the claimed design (Pet., 100), Masimo never addresses that Fong’s “curved edge” is spaced significantly away from Fong’s opposed shapes, unlike the close proximity of the claimed design that contributes to its elegant, and streamlined concentric circle appearance. EX2001, ¶¶140-144.

Additionally, Fong’s opposed shapes (inner edges in blue, below) are spaced significantly inwardly from the line included in Fig. 4 (yellow, below), here again conveying a different overall appearance that lacks the claimed design’s streamlined, well-proportioned appearance.



EX2001, ¶143 (Left: EX1001, Fig. 4 (annotated); Right: EX1008, Fig. 4 (annotated)).

To the extent Masimo relies on the circle delineating the watch's back face in Fig. 4 (which the Petition never mentions), Fong's Fig. 2 makes clear that this line is included merely to show the edges of the curved rear watch surface. EX2001, ¶¶141-142.



EX2001, ¶¶141-142 (EX1008, Figs. 4 and 5 (annotated)).

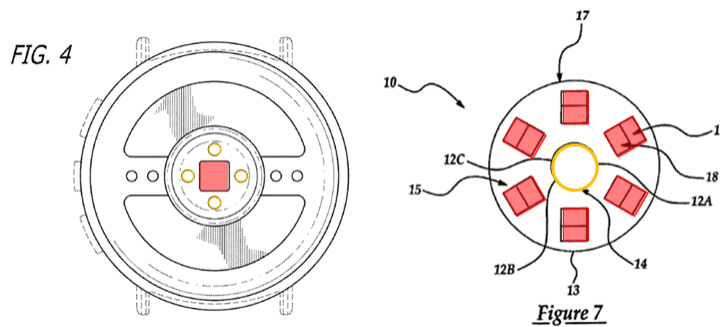
Because the Petition has failed to provide explanation that accounts for these visible differences, Masimo has not demonstrated that Fong is a proper primary reference. *See, e.g., High Point Design*, 730 F.3d at 1314; *Harvey*, 12 F.3d at 1063.

2. Masimo Fails to Demonstrate that it Would Have Been Obvious to a DOSA To Modify Fong in View of Mendelson, Bushnell, and Chung To Create the Claimed Design

a) Mendelson and Chung are Not Proper Secondary References for Combination with Fong

Masimo asserts that “Mendelson and Chung are so related to Fong because they disclose suitable sensors for Fong’s design.” Pet., 106. Masimo’s theory is based on legal error by improperly focusing on Mendelson’s and Chung’s use as a sensor rather than visual appearances of the designs, which have little in common and many readily apparent differences. *Termax*, IPR2022-00106, Paper 7 at 29.

In contrast to Mendelson’s arrangement of rectangle pairs about a central circle and Chung’s arrangement of four rectangles around curved shapes, Fong includes a central square element with four circles arranged along the square’s straight sides. Mendelson and Chung also lack any relationship between its pairs of rectangles and surrounding opposed arch shapes, which are not present in Mendelson and Chung. EX2001, ¶¶145-146.

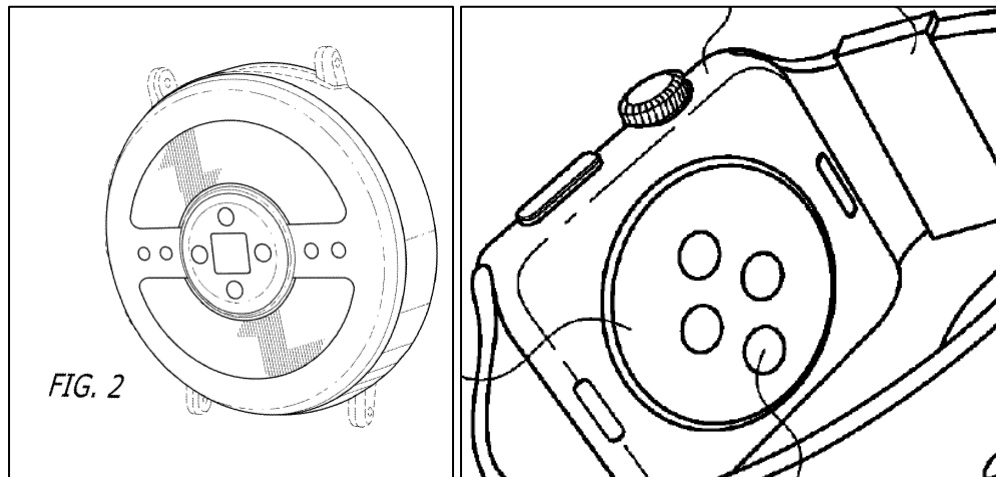


EX2001, ¶145 (EX1008, Fig. 4 (annotated); EX1011, Fig. 11 (annotated)).

The Petition never specifically addresses these differences, and fails to satisfy its burden of demonstrating these references are so related in appearance despite these differences. *Glavas*, 230 F.2d at 450.

b) Masimo’s Proposed Combination of Bushnell with Fong is Improper

Masimo’s proposed combination of Bushnell’s “convex housing” with Fong results in a fundamental change contrary to Fong’s original design. Fong includes a protruding central circle that is on a different plane compared to the pair of opposed shapes above and below the central protruding circle.



Left: EX1008, Fig. 2; Right: EX1009, Fig. 1A (excerpted).

Petitioner ignores that its proposal would eliminate Fong’s arrangement in favor of a different arrangement that would cause the opposed shapes to protrude outwardly, and the inner circle to instead be recessed. *See, e.g., Pet.*, 112 (showing Petitioner’s proposed combined design). EX2001, ¶¶147-148.

Tellingly, while Masimo points to Fong’s central “circular surface protruding from the back of the device” as providing similarity that supports combination with Bushnell’s protruding surface, Masimo’s combination deviates from these features to instead place Fong’s opposed shapes on the protruding surface. EX2001, ¶149. Nothing in Bushnell depicts such shapes on its protruding surface, and the Petition is entirely silent as to its departure from Fong’s design and the central protruding surface that is the basis of Masimo’s proposed combination with Bushnell. Instead, the only depiction of such a feature in the record is in the ’279 patent itself, highlighting the Petition’s reliance on impermissible hindsight to reconstruct the

claimed design from disparate elements. *Premier Gem*, IPR2016-00434, Paper 9 at 16; *L.A. Gear*, 988 F.2d at 1124

c) Masimo’s Proposed Series of Modifications Beyond the Designs Depicted in Mendelson and Bushnell are Improper

Masimo acknowledges that multiple additional modifications are necessary to provide features of the claimed design beyond that depicted by Fong/Mendelson/Bushnell/Chung, here again tacitly acknowledging that modifying Fong based on these references fails to achieve the claimed design. Pet., 110-111 (modify Mendelson to use “one array” of photodiodes instead of pairs, and to have “curved rectangles”); 111. These additional modifications are directed to features that are not depicted by either reference and are not trivial or *de minimis*. EX2001, ¶150-151.

The deficiencies discussed above are not remedied by Masimo’s improper reliance on motivations based on purported functionality of various features rather than the actual design appearances. The alleged motivation of replacing Fong’s purported PPG sensor (which is not disclosed or even mentioned in Fong) with a different sensor does not provide motivation for incorporating photodiodes having the particular ornamental appearance the Petition proposes. *Termax*, IPR2022-00106, Paper 7 at 29 (rejecting Petitioner’s reliance on aspects other than ornamental appearance). Masimo’s reliance on additional functional alleged improvements

achieved by the combination of Fong with Mendelson, Bushnell, and Chung are improper. For example, Masimo's assertions that the combination would have been motivated by "improving Fong's PPG sensor accuracy" and that Fong, Mendelson, and Chung's "PPG sensors include the same basic components" improperly rely on use/utility rather than the appearance of Fong, Mendelson, Bushnell, and Chung. Pet., 107; 110.

For reasons similar to those discussed above in Grounds 1 and 2, Masimo's additional modifications to alter the number, shape, and edges of Mendelson's rectangular photodiodes beyond what is depicted in Fong, Mendelson, Bushnell, and Chung is improper. *See supra* §IV.C.2.b and IV.D.2.c; *see also Harvey*, 12 F.3d at 1065.

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Attorney Docket No: 50095-0151IP1

V. CONCLUSION

Patent Owner requests that the Board deny institution.

Respectfully submitted,

Date: July 12, 2023

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Case No. IPR2023-00774
Attorney Docket No: 50095-0151IP1

CERTIFICATION UNDER 37 CFR § 42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response totals 13,984, which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Respectfully submitted,

Date: July 12, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), the undersigned certifies that on July 12, 2023, a complete and entire copy of this Patent Owner's Preliminary Response and its supporting exhibits were provided via email, to the Petitioner by serving the email correspondence addresses of record as follows:

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Excerpts of File History of
U.S. Patent No. 10,076,257

Application No. 14/136,658 (Attorney Docket No.: P7276USC1)

Reply dated September 2, 2016

Reply to Final Office Action of March 2, 2016

REMARKS

Introduction

Claims 1-23, 37, 38, 41, and 43 have been cancelled without prejudice. Applicants hereby reserve the right to pursue the subject matter of one or more of cancelled claims in one or more continuation applications. Claims 24-28 have been withdrawn without prejudice. Claims 44-54 have been added. Claims 29, 32-36, 40, and 42 have been amended. Claims 30, 31, and 39 are also currently pending in the above-identified patent application. No new subject matter has been introduced and all amendments are fully supported by the application as originally filed.

Claims 29-32 and 36 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Gilles et al. U.S. Patent No. 4,635,646 (hereinafter "Gilles").

Claims 33-35, 39, 40, and 42 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gilles.

A three-month extension of time in which to respond to the Final Office Action mailed March 2, 2016 is respectfully requested. It is noted that a one-month extension was previously requested and paid for with the Reply filed June 30, 2016. The required fees are being paid by credit card, but the Director is authorized to charge any underpayment or to credit any overpayment to Deposit Account No. 50-6007.

Reconsideration and allowance of this application in light of the following remarks is hereby respectfully requested.

Summary of Examiner Interview

Applicants would like to thank the Examiner for the many courtesies extended during the interview of August 18, 2016 with the undersigned and the interview of August 23, 2016 with the undersigned (herein after "the Examiner Interviews"). During the interviews, the

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currently amended claims were discussed in light of the cited references.

The Rejections Under 35 U.S.C. § 102(b)

Claims 29-32 and 36 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Gilles. These rejections are respectfully traversed.

Applicants' amended independent claim 29 defines an electronic device for detecting a user's cardiac signal, including an enclosure, a heart sensor configured to detect the user's cardiac signal, and a processor coupled to the heart sensor. The heart sensor includes a first lead including a first pad that is embedded in a first portion of the enclosure, wherein an exterior surface of the enclosure includes an exterior surface of the first portion, wherein the first pad is positioned underneath the exterior surface of the first portion, and wherein the first pad is configured to detect a first electrical signal of the user's cardiac signal via the user's skin's contact with the exterior surface of the first portion of the enclosure. The heart sensor also includes a second lead including a second pad that is embedded in a second portion of the enclosure, wherein the second pad is configured to detect a second electrical signal of the user's cardiac signal via the user's skin's contact with at least one of the second pad and the second portion of the enclosure. The processor is configured to receive and process the detected cardiac signal, wherein the first lead further includes a first connector coupled to the first pad and configured to provide the first electrical signal detected by the first pad to the processor, and wherein the second lead further includes a second connector coupled to the second pad and configured to provide the second electrical signal detected by the second pad to the processor.

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For example, "[h]eart sensor 112 can include one or more leads connected to the exterior of the electronic device such that the user may contact one or more of the leads to provide an electrical signal associated with the user's heart to heart sensor 112," and "[t]he cardiac signals detected by the heart sensor leads can be coupled to a processor incorporated in heart sensor 112, or instead provided to processor 102," where "[t]he processor may then analyze the received signals and generate, from the received signals, one or more characteristic quantities of the user's heartbeat or heart rate for authentication" (applicants' specification, paragraph [0033]). The "size and location of the leads can be selected to ensure that sufficient contact is made between the user (e.g., the user's hand or finger) and the leads for cardiac signals to be detected," where "each lead can include a pad or extended area placed on the outer or inner surface of an electronic device bezel or housing" or "an entire portion of the electronic device enclosure (e.g., a portion of a bezel or housing) can serve as a lead for the heart sensor," and the "pad or extended area can then be coupled to a wire or other connector for providing cardiac signals to a processor for processing" (applicants' specification, paragraph [0034]), such as leads 322 and 324 of FIG. 3. As a specific example, with respect to applicants' FIG. 4B, an enclosure of electronic device 450 may include a bezel 460, where, "[i]f the electrical conductivity and size of bezel 460, and the strength or characteristics of the cardiac signal provided by the user and detected by the heart sensor are adapted such that the signal can be transmitted along short distances in bezel 460, lead 472 of the heart sensor can be positioned against the back surface of bezel 460," or "lead 472 can be placed within the thickness of bezel 460 (e.g., in a pocket within the bezel wall), but underneath the outer surface of the bezel," where a "short thickness

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of bezel 460 can allow electrical signals to propagate from the user to the outer surface of bezel 460, through bezel 460, and into lead 472, which may in turn transmit the signals to a processor using connector 474" (applicants' specification, paragraph [0047]).

Gilles is directed towards heart monitoring apparatus. Gilles' FIG. 5 shows apparatus including an auxiliary device 9 with a male coupling 11 on one face for coupling to a case 3, and a female coupling 12 on another face for coupling to auxiliary electrode 7. Auxiliary device 9 is connected to several other auxiliary electrodes 13, 14, and 15 which adhere to the patient's bust in pre-determined positions via wires, as shown in Gilles' FIG. 8.

Nowhere does Gilles show or suggest an electronic device with an enclosure and a heart sensor with a first pad embedded in a first portion of the enclosure and a second pad embedded in a second portion of the enclosure, where "an exterior surface of the enclosure comprises an exterior surface of the first portion, wherein the first pad is positioned underneath the exterior surface of the first portion, and wherein the first pad is configured to detect a first electrical signal of the user's cardiac signal via the user's skin's contact with the exterior surface of the first portion of the enclosure," as required by applicants' amended independent claim 29. That is, nowhere does Gilles show or suggest any electrode embedded in any portion of case 3 / auxiliary device 9, let alone show or suggest a first electrode embedded in a first portion of case 3 / auxiliary device 9 and a second electrode embedded in a second portion of case 3 / auxiliary device 9. Instead, each one of auxiliary electrodes 13, 14, and 15 of Gilles is distinct and independent from case 3 / auxiliary device 9 and is remotely coupled to case 3 / auxiliary device 9 via one or more wires of Gilles' FIG. 8.

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On pages 2 and 3 of the Office Action, the Examiner attempts to equate the wire connecting electrode 13 to case 3 / auxiliary device 9 with the first lead of applicants' independent claim 29 and to equate the wire connecting electrode 14 to case 3 / auxiliary device 9 with the second lead of applicants' independent claim 29. However, applicants' amended independent claim 29 requires its first lead to include a first pad configured to "detect a first electrical signal of [a] user's cardiac signal via the user's skin's contact with [an] exterior surface of [a] first portion of [an] enclosure [in which the first pad is embedded]," and nowhere does Gilles show or suggest that the wire connecting electrode 13 to case 3 / auxiliary device 9 is configured to detect an electrical signal of a user's cardiac signal via the user's skin's contact with an exterior surface of case 3 / auxiliary device 9. Instead, Gilles' electrode 13 is only configured to detect an electrical signal of a user's cardiac signal via the user's contact with electrode 13, which is clearly distinct from and not embedded in case 3 / auxiliary device 9.

For at least these reasons, applicants respectfully submit that applicants' amended independent claim 29 and all claims dependent therefrom, including claims 30-36, 39, 44, 45, and 52-54, are allowable over Gilles. Therefore, applicants respectfully request that the rejections of claims 29-32 and 36 under 35 U.S.C. § 102(b) with respect to Gilles be withdrawn.

The Rejections Under 35 U.S.C. § 103(a)

Claims 33-35 and 39

Claims 33-35 and 39 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gilles. Applicants respectfully submit that each one of claims 33-35 and 39, which depends from applicants' amended independent claim 29, is allowable

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over Gilles for at least some of the same reasons as applicants' amended independent claim 29 is allowable over Gilles. Therefore, applicants respectfully request that the rejections of claims 33-35 and 39 under 35 U.S.C. § 103(a) with respect to Gilles be withdrawn be withdrawn.

Claims 40 and 42.

Claims 40 and 42 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gilles. These rejections are respectfully traversed.

Applicants' amended independent claim 40 defines an electronic device for detecting a user's cardiac signal, including an enclosure, a display screen exposed to the user through an opening in the enclosure, a heart sensor configured to detect the user's cardiac signal, and a processor coupled to the heart sensor. The heart sensor includes a first lead embedded in a first portion of the enclosure of the electronic device, wherein the first portion of the electronic device comprises an enclosure of the electronic device, wherein the first lead is configured to detect a first electrical signal of the user's cardiac signal via the user's contact with at least one of the first lead and the first portion of the enclosure of the electronic device. The heart sensor also includes a second lead embedded in the display screen of the electronic device, wherein the second lead is configured to detect a second electrical signal of the user's cardiac signal via the user's contact with at least one of the second lead and the display screen of the electronic device. The processor is configured to process the first and second electrical signals of the user's cardiac signal.

For example, as shown in applicants' FIG. 3, "electronic device 300 can include additional lead 326 embedded in or behind display 302," where "[l]ead 326 can be operative to detect a user's

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heart activity as the user moves a finger across display 302," and, "[u]sing lead 326, the electronic device can detect an electrical signal from a different portion of the user's body (e.g., leads 322 and 324 detect signals through a first hand, and lead 326 detects signals through the second hand), which can provide the processor with additional information for determining characteristics of the user's cardiac activity" (applicants' specification, paragraph [0043]).

Gilles is directed towards heart monitoring apparatus. Gilles' FIG. 5 shows apparatus including an auxiliary device 9 with a male coupling 11 on one face for coupling to a case 3, and a female coupling 12 on another face for coupling to auxiliary electrode 7. Auxiliary device 9 is connected to several other auxiliary electrodes 13, 14, and 15 which adhere to the patient's bust in pre-determined positions via wires, as shown in Gilles' FIG. 8.

Nowhere does Gilles show or suggest an electronic device with a heart sensor that includes "a first lead embedded in a first portion of [an] enclosure of the electronic device," as well as "a second lead embedded in [a] display screen [exposed to the user through an opening in the enclosure] of the electronic device, wherein the second lead is configured to detect a second electrical signal of the user's cardiac signal via the user's contact with at least one of the second lead and the display screen of the electronic device," as required by applicants' amended independent claim 40. That is, nowhere does Gilles show or suggest any electrode embedded in any enclosure portion of case 3 / auxiliary device 9, let alone show or suggest a first electrode embedded in an enclosure of case 3 / auxiliary device 9 and a second electrode embedded in a display screen exposed to a user through an opening in such an enclosure of case 3 / auxiliary device 9. Instead, each one of auxiliary electrodes 13, 14, and 15 of Gilles is distinct and independent from

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case 3 / auxiliary device 9 and is remotely coupled to case 3 / auxiliary device 9 via one or more wires of Gilles' FIG. 8.

Assuming, *arguendo*, that Gilles' auxiliary electrode 7 as coupled to case 3 / auxiliary device 9 may be equated with a first lead embedded in an enclosure of an electronic device, which applicants do not accept, nowhere does Gilles show or suggest any other electrode that may be embedded in case 3 / auxiliary device 9, let alone embedded in Gilles' display 24 as enclosed within case 3. In fact, each one of all other electrodes 13, 14, and 15 of Gilles' FIG. 8 is disclosed as being positioned at different positions along the user's body distanced via wires from the position at which case 3 / auxiliary device 9 / auxiliary electrode 7 / display 24 is positioned.

For at least these reasons, applicants respectfully submit that applicants' amended independent claim 40 and all claims dependent therefrom, including claims 42 and 46-51, are allowable over Gilles. Therefore, applicants respectfully request that the rejection of claims 40 and 42 under 35 U.S.C. § 103(a) with respect to Gilles be withdrawn.

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Conclusion

In view of the foregoing, applicants respectfully submit that claims 29-36, 39, 40, 42, and 44-54 are allowable. This application is therefore in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

Respectfully submitted,

Date: September 2, 2016

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Application No. 14/136,658 (Attorney Docket No.: P7276USC1)

Reply dated January 15, 2018

Reply to Non-Final Office Action of September 4, 2017

REMARKS

Introduction

Claims 1-23, 37, 38, 41, and 43 have been cancelled without prejudice. Applicant hereby reserves the right to pursue the subject matter of any cancelled claims in one or more continuation applications. Claims 24-28 have been withdrawn without prejudice. Claims 29-36, 39, 40, 42, and 44-54 are also currently pending in the above-identified patent application. No new subject matter has been introduced and all amendments are fully supported by the application as originally filed.

Claims 29-36 and 40¹ have been rejected under 35 U.S.C. § 102 as allegedly being anticipated by Weiss U.S. Patent No. 5,623,926 (hereinafter "Weiss").

A one-month extension of time in which to respond to the Non-Final Office Action mailed September 14, 2017 is respectfully requested. The required fee is being paid by credit card, but the Director is authorized to charge any underpayment or to credit any overpayment to Deposit Account No. 50-6007.

Reconsideration and allowance of this application in light of the following remarks is hereby respectfully requested.

The Rejections Under 35 U.S.C. § 102

Claims 29-36

Claims 29-36 have been rejected under 35 U.S.C. § 102 as allegedly being anticipated by Weiss. These rejections are respectfully traversed.

¹ Applicant respectfully notes that none of applicant's claims 39, 42, and 44-54 are referenced in the Office Action. Therefore, applicant assumes that each one of applicant's claims 39, 42, and 44-54 are dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Confirmation by the Examiner of this assumption is respectfully requested.

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Applicant's independent claim 29 defines an electronic device for detecting a user's cardiac signal, including an enclosure, a heart sensor configured to detect the user's cardiac signal, and a processor coupled to the heart sensor. The heart sensor includes a first lead including a first pad that is embedded in a first portion of the enclosure, wherein an exterior surface of the enclosure includes an exterior surface of the first portion, wherein the first pad is positioned underneath the exterior surface of the first portion, and wherein the first pad is configured to detect a first electrical signal of the user's cardiac signal via the user's skin's contact with the exterior surface of the first portion of the enclosure. The heart sensor also includes a second lead including a second pad that is embedded in a second portion of the enclosure, wherein the second pad is configured to detect a second electrical signal of the user's cardiac signal via the user's skin's contact with at least one of the second pad and the second portion of the enclosure. The processor is configured to receive and process the detected cardiac signal, wherein the first lead further includes a first connector coupled to the first pad and configured to provide the first electrical signal detected by the first pad to the processor, and wherein the second lead further includes a second connector coupled to the second pad and configured to provide the second electrical signal detected by the second pad to the processor.

For example, "[h]eart sensor 112 can include one or more leads connected to the exterior of the electronic device such that the user may contact one or more of the leads to provide an electrical signal associated with the user's heart to heart sensor 112," and "[t]he cardiac signals detected by the heart sensor leads can be coupled to a processor incorporated in heart sensor 112, or instead provided to processor 102," where "[t]he processor may then analyze the received signals and generate, from the received

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signals, one or more characteristic quantities of the user's heartbeat or heart rate for authentication" (applicant's specification, paragraph [0033]). The "size and location of the leads can be selected to ensure that sufficient contact is made between the user (e.g., the user's hand or finger) and the leads for cardiac signals to be detected," where "each lead can include a pad or extended area placed on the outer or inner surface of an electronic device bezel or housing" or "an entire portion of the electronic device enclosure (e.g., a portion of a bezel or housing) can serve as a lead for the heart sensor," and the "pad or extended area can then be coupled to a wire or other connector for providing cardiac signals to a processor for processing" (applicant's specification, paragraph [0034]), such as leads 322 and 324 of FIG. 3. As a specific example, with respect to applicant's FIG. 4B, an enclosure of electronic device 450 may include a bezel 460, where, "[i]f the electrical conductivity and size of bezel 460, and the strength or characteristics of the cardiac signal provided by the user and detected by the heart sensor are adapted such that the signal can be transmitted along short distances in bezel 460, lead 472 of the heart sensor can be positioned against the back surface of bezel 460," or "lead 472 can be placed within the thickness of bezel 460 (e.g., in a pocket within the bezel wall), but underneath the outer surface of the bezel," where a "short thickness of bezel 460 can allow electrical signals to propagate from the user to the outer surface of bezel 460, through bezel 460, and into lead 472, which may in turn transmit the signals to a processor using connector 474" (applicant's specification, paragraph [0047]).

Weiss is directed towards an ECG monitor 16 that includes a bottom case 14 of a housing, where an LCD display is provided at an opposite case (i.e., a top case) of the housing. Weiss' ECG monitor 16 also includes a swing arm assembly 10 rotatably mounted on

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the bottom case 14, where sensing electrodes 12 are mounted on the swing arm assembly 10 to allow for variable positioning of the sensing electrodes 12 relative to the display when the swing arm assembly 10 rotates with respect to the bottom case 14.

Nowhere does Weiss show or suggest an electronic device with an enclosure and a heart sensor with "a first pad [that is] embedded in a first portion of the enclosure" and a "second pad [that is] embedded in a second portion of the enclosure," where "an exterior surface of the enclosure comprises an exterior surface of the first portion, wherein the first pad is positioned underneath the exterior surface of the first portion, and wherein the first pad is configured to detect a first electrical signal of the user's cardiac signal via the user's skin's contact with the exterior surface of the first portion of the enclosure," as required by applicant's independent claim 29. That is, nowhere does Weiss show or suggest that any electrode 12 is embedded in any portion of case 14 of the housing of ECG monitor 16 or in any portion of swing arm assembly 10 of ECG monitor 16, let alone show or suggest that any electrode 12 is "positioned underneath [an] exterior surface of" a portion of case 14 or swing arm assembly 10 such that the electrode 12 is "configured to detect a first electrical signal of [a] user's cardiac signal via the user's skin's contact with [such an] exterior surface" of case 14 or swing arm assembly 10. Instead, each one of Weiss' electrodes 12 is "mounted on" swing arm assembly 10 (Weiss, column 1, line 54), where an outermost piece 46 of each one of Weiss' electrodes 12 "contacts the skin" of the user (Weiss, column 3, line 7).

For at least these reasons, applicant respectfully submits that applicant's independent claim 29 and all claims dependent therefrom, including claims 30-36, 39, 44, 45, and 52-54, are allowable over Weiss. Therefore, applicant respectfully requests

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that the rejections of claims 29-36 under 35 U.S.C. § 102 be withdrawn.

Claim 40

Claim 40 has been rejected under 35 U.S.C. § 102 as allegedly being anticipated by Weiss. This rejection is respectfully traversed.

Applicant's independent claim 40 defines an electronic device for detecting a user's cardiac signal, including an enclosure, a display screen exposed to the user through an opening in the enclosure, a heart sensor configured to detect the user's cardiac signal, and a processor coupled to the heart sensor. The heart sensor includes a first lead embedded in a first portion of the enclosure of the electronic device, wherein the first portion of the electronic device comprises an enclosure of the electronic device, wherein the first lead is configured to detect a first electrical signal of the user's cardiac signal via the user's contact with at least one of the first lead and the first portion of the enclosure of the electronic device. The heart sensor also includes a second lead embedded in the display screen of the electronic device, wherein the second lead is configured to detect a second electrical signal of the user's cardiac signal via the user's contact with at least one of the second lead and the display screen of the electronic device. The processor is configured to process the first and second electrical signals of the user's cardiac signal.

For example, as shown in applicant's FIG. 3, "electronic device 300 can include additional lead 326 embedded in or behind display 302," where "[l]ead 326 can be operative to detect a user's heart activity as the user moves a finger across display 302," and, "[u]sing lead 326, the electronic device can detect an electrical signal from a different portion of the user's body (e.g., leads 322

Application No. 14/136,658 (Attorney Docket No.: P7276USC1)

Reply dated January 15, 2018

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and 324 detect signals through a first hand, and lead 326 detects signals through the second hand), which can provide the processor with additional information for determining characteristics of the user's cardiac activity" (applicant's specification, paragraph [0043]).

Weiss is directed towards an ECG monitor 16 that includes a bottom case 14 of a housing, where an LCD display is provided at an opposite case (i.e., a top case) of the housing. Weiss' ECG monitor 16 also includes a swing arm assembly 10 rotatably mounted on the bottom case 14, where sensing electrodes 12 are mounted on the swing arm assembly 10 to allow for variable positioning of the sensing electrodes 12 relative to the display when the swing arm assembly 10 rotates with respect to the bottom case 14.

Nowhere does Weiss show or suggest an electronic device with a heart sensor that includes "a first lead embedded in a first portion of [an] enclosure of the electronic device," as well as "a second lead embedded in [a] display screen [exposed to the user through an opening in the enclosure] of the electronic device, wherein the second lead is configured to detect a second electrical signal of the user's cardiac signal via the user's contact with at least one of the second lead and the display screen of the electronic device," as required by applicant's independent claim 40. That is, nowhere does Weiss show or suggest that a first one of electrodes 12 is embedded in case 14 or swing arm assembly 10 and that a second one of electrodes 12 is embedded in a display screen exposed to a user through an opening in case 14 or swing arm assembly 10. In fact, nowhere does Weiss show or suggest that any electrode 12 is "embedded in the display screen" of ECG monitor 16, let alone show or suggest that such an electrode 12 is configured to "detect a second electrical signal of the user's cardiac signal" via the user's contact with at least one of such an electrode 12 and the display

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screen. In fact, Weiss teaches away from such an electronic device of applicant's independent claim 40, as Weiss provides each sensing electrode 12 on swing assembly 10 that "allows for variable positioning of the sensing electrodes relative to the display" of ECG monitor 16 (Weiss, column 1, lines 25-27).

For at least these reasons, applicant respectfully submits that applicant's independent claim 40 and all claims dependent therefrom, including claims 42 and 46-51, are allowable. Therefore, applicant respectfully requests that the rejection of claim 40 under 35 U.S.C. § 102 be withdrawn.

Conclusion

In view of the foregoing, applicant respectfully submits that claims 29-36, 39, 40, 42, and 44-54 are allowable. This application is therefore in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

Respectfully submitted,

Date: January 15, 2018

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Excerpts of File History of
U.S. Patent No. 10,987,054

REMARKS

This paper is submitted in response to the Office action mailed on September 23, 2020. This paper amends claims 21, 23-24, 26, 28-30, 32, 35-37, and 39. Support for these amendments and new claims can be found, for example, in at least paragraphs 83-108 and 110-144, and FIGS. 4A-7 and 9A-10D of the application as filed. No new matter is added. The amendments and arguments presented herein, as well as any claim cancellations, are made solely for the purpose of advancing prosecution, and do not indicate acquiescence to the rejections or to any characterizations of the cited references or the instant claims. Moreover, all amendments and remarks herein are made without prejudice to, disclaimer of, or dedication of any subject matter, and a right is specifically reserved to file continuation and/or divisional applications claiming any subject matter disclosed in the application.

After entry of this Amendment and Response, claims 21-40 will be pending.

I. Interview Summary

The Assignee thanks Examiner Kim for the courtesy of a telephonic interview on September 18, 2020. In attendance were Examiner Kim and the Assignee's representative Peter Nagle. During the call, the rejections were discussed, as well as proposed amendments directed to the concept that electrodes are positioned on a carrier member (e.g., a carrier member that is formed from a transparent material and coupled to a housing member). The Examiner indicated that the proposed amendments would likely overcome the rejections of record, but that further consideration or search would be required.

II. Claim Rejections Under 35 U.S.C. § 102

The Examiner rejected claims 21, 23, and 35-38 under 35 U.S.C. § 102 as being anticipated by Kegasawa (U.S. Patent Pub. No. 2016/0338598; hereinafter "Kegasawa"). These claims are believed to be patentable over Kegasawa at least because Kegasawa does not disclose each and every limitation of the rejected independent claims.

Amended claim 21 recites (emphasis added):

An electronic watch comprising:

a housing member;

a display at least partially enclosed by the housing member;

a carrier assembly coupled to the housing member and comprising:

a carrier member formed from a transparent material;

a first electrode positioned on the carrier member, operably coupled to a processor and configured to detect a first voltage; and

a second electrode positioned on the carrier member, operably coupled to the processor and configured to detect a second voltage, the first and second electrodes at least partially surrounding a first region of the carrier member and a second region of the carrier member;

a light emitter positioned below the first region of the carrier member;

a light receiver positioned below the second region of the carrier member and configured to receive light reflected from a wrist;

a third electrode coupled to the housing member, operably coupled to the processor, and configured to detect a third voltage; and

the processor positioned within the electronic watch and configured to determine an electrocardiogram using the first voltage, the second voltage, and the third voltage.

Thus, amended claim 21 recites an electronic watch that includes a housing member and a carrier assembly coupled to the housing member. The carrier assembly includes “a carrier member formed from a transparent material,” “a first electrode positioned on the carrier member” and “a second electrode positioned on the carrier member.” Figure 4A of the instant application, reproduced below, illustrates a nonlimiting example of a watch with a housing member (e.g., the housing 206) and a carrier assembly coupled to the housing member, the carrier assembly including a carrier member (e.g., the “carrier 404”) and first and second electrodes 412, 414 on the carrier member.

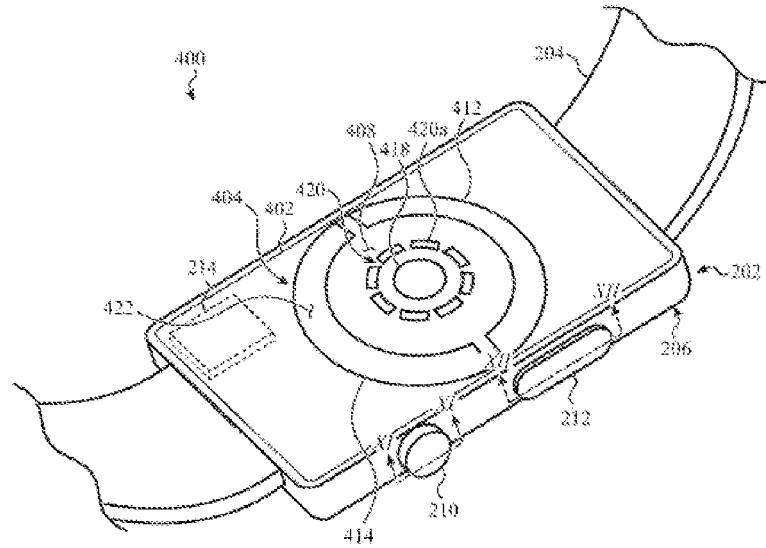


FIG. 4A

Figure 9A of the instant application, reproduced below, is a cross-sectional view of a nonlimiting example of an electronic watch, showing how a carrier member (e.g., the “carrier 904”) has electrodes (e.g., electrode 900) positioned thereon, and how the carrier member is a different structural component than the housing member 914 to which it is coupled.

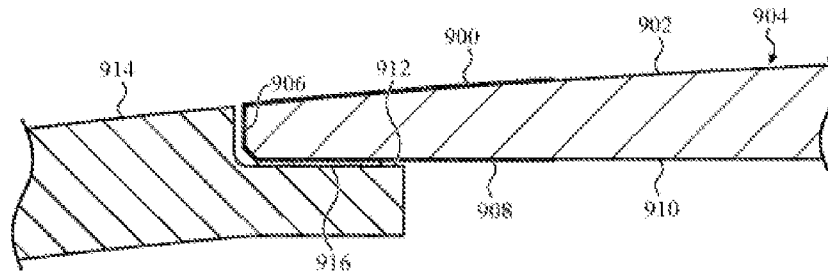
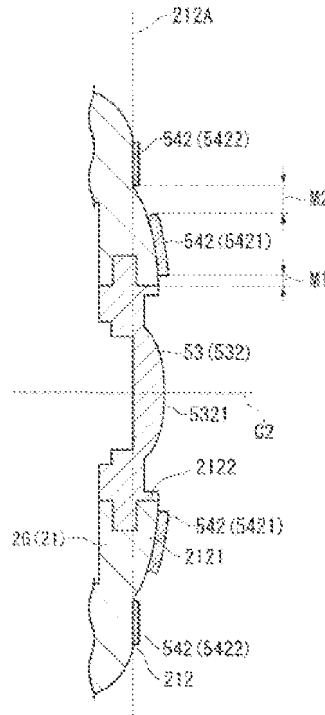


FIG. 9A

Thus, as illustrated in the examples shown in figures 4A and 9A, above, a carrier assembly that includes a carrier member and first and second electrodes may be coupled to a housing member (e.g., a different component than the carrier member) of an electronic watch.

Kegasawa, on the other hand, does not disclose at least “a housing member,” and “a carrier assembly coupled to the housing member and comprising: carrier member formed from a transparent material; a first electrode positioned on the carrier member... [and] a second electrode positioned on the carrier member,” as recited by claim 21. For example, and as described in the Examiner interview held on September 18, 2020, Kegasawa describes a sensing system in which electrodes are arranged along various surfaces of the housing, but are not positioned on a component that is analogous to the claimed carrier member (which is a

different component than the housing member of claim 21. A representative figure from Kegasawa is reproduced below showing electrodes 542 positioned along various regions of the housing.



Furthermore, as noted in the Substance of the Interview, above, the Examiner indicated that amendments similar to those submitted herein appear to overcome the rejections of record. For at least the foregoing reasons, the Assignee respectfully submits that claim 21 is patentable, along with its dependent claims, over the rejections of record.

Claim 35 is believed to be patentable, along with its dependent claims, over the rejections of record for at least similar reasons to those describe above with respect to claim 21. For example, amended claim 35 recites, in part, “**a housing member; [and] ... a carrier assembly coupled to the housing member and comprising: a carrier member protruding outward from an external surface of the housing member; and a rear electrode positioned on the carrier member.**” The Assignee therefore respectfully requests that the rejections of claims 21 and 35, along with their dependent claims, be reconsidered and withdrawn.

III. Claim Rejections Under 35 U.S.C. § 103

The Examiner rejected claim 22 under 35 U.S.C. § 103(a) as being obvious over Kegasawa in view of Rothkopf (U.S. Patent Pub. No. 2016/0058375; hereinafter “Rothkopf”).

The Examiner rejected claims 24, 26, 28, 32, and 39 under 35 U.S.C. § 103(a) as being obvious over Kegasawa in view of Yuen et al. (U.S. Patent Pub. No. 2018/0235542; hereinafter “Yuen”).

The Examiner rejected claim 25 under 35 U.S.C. § 103(a) as being obvious over Kegasawa in view of in view of Kub et al. (U.S. Patent Pub. No. 2016/0120472; hereinafter “Kub”).

The Examiner rejected claims 27, 29-31, 33-34, and 40 under 35 U.S.C. § 103(a) as being obvious over Kegasawa in view of Ely (U.S. Patent Pub. No. 2015/0041289; hereinafter “Ely”).

The rejected claims include independent claim 29. Amended independent claim 29 is believed to be patentable over Kegasawa in view of Ely at least because, as noted above, Kegasawa fails to describe “a rectangular **housing member** defining a rectangular front opening and a circular rear opening; ... [and] **a carrier assembly coupled to the rectangular housing member and comprising: a carrier member** having a circular carrier profile and positioned over the circular rear opening; [and] **a rear electrode positioned on the carrier member**,” as recited by claim 29. Ely is not cited for the missing limitations, and therefore does not cure the deficiency of Kegasawa.

The rejected claims also include claims 22, 24-28, 30-34, and 39-40 each depend from independent claims 21, 29, or 35, and are believed to be allowable at least insofar as the claims depend from patentably distinct base claims. Accordingly, the Assignee submits that dependent claims 22, 24-28, 30-34, and 39-40 are in condition for allowance. The Assignee makes this statement without waiving and without reference to any independent bases of patentability within the claims and thus reserves the right to argue such bases in a future paper if necessary.

IV. Nonstatutory Double Patenting

Claims 21-40 were rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of U.S. Pat. No. 10,610,167 and claim 1 of U.S. App. No. 16/118,282.

The Assignee notes that the First Action Interview Office action is ambiguous as to whether or not the rejection is provisional (stating that “claims 21-40 are rejected / provisionally rejected”). Regardless of the status of the rejection, the Assignee will consider filing a terminal disclaimer once the claims are otherwise in condition for allowance.

V. Conclusion

The Assignee thanks the Examiner for the thorough review of the application. The Assignee respectfully submits the present application, as amended, is in condition for allowance and respectfully requests the issuance of a Notice of Allowability as soon as practicable.

The Assignee believes no fees or petitions are due with this filing. However, should any such fees or petitions be required, please consider this a request therefor and authorization to charge Deposit Account No. 504621 as necessary.

If the Examiner should require any additional information or amendment, please contact the undersigned attorney.

Dated: November 23, 2020.

Respectfully submitted,

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Excerpts of File History of
U.S. Patent No. 11,474,483



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/672,653	02/15/2022	Fletcher R. Rothkopf	P22914USC8	5302

62579	7590	04/20/2022
APPLE INC./BROWNSTEIN		
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410 Seventeenth Street		
Suite 2200		
Denver, CO 80202		

EXAMINER	
GEDEON, BRIAN T	

ART UNIT	PAPER NUMBER
3792	

NOTIFICATION DATE	DELIVERY MODE
04/20/2022	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdoCKET@bhfs.com

Office Action Summary**Application No.**

17/672,653

Applicant(s)

Rothkopf et al.

Examiner

BRIAN T GEDEON

Art Unit

3792

AIA (FITF) Status

Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 24 February 2022.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 21-40 is/are pending in the application.

5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 21-40 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 15 February 2022 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

3) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date ____.

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)

4) ☐ Other: ____.

Paper No(s)/Mail Date ____.

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DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Priority

2. This application is a continuation of US Application nos. 17/188,966 and 17/188,995 both filed 1 March 2021, both are continuations of US Application no. 16/826,130, now US Patent no. 10,942,491 filed 20 March 2020, which is a continuation of US Application nos. 15/261,914 now US Patent no. 10,613,485, 15/261,912, now US Patent no. 10,620,591, and 15/261,917 now US Patent no. 10,627,783 filed 10 September 2016, which are continuations of US Application no. 14/842,617, now US Patent no. 10,599,101 filed 1 September 2015, which claims the benefit of domestic priority of US Provisional Application no. 62/044,974 filed 2 September 2014.

Information Disclosure Statement

3. The information disclosure statement filed 15 February 2022 has been considered.

Response to Amendment

4. The preliminary amendment filed 24 February 2022 has been acknowledged. Claims 21-40 are pending.

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Claim Objections

5. Claim 24 is objected to because of the following informalities: claim 24 is a duplicate of claim 23. Appropriate correction is required.

6. Claim 27 is objected to because of the following informalities: claim 27 is a duplicate of claim 25. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

8. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 21, 22, 26, 28-30, 33-35, 37, 39, and 40 is/are rejected under 35 U.S.C. 103 as being unpatentable over Hong et al. (US Publication no. 2014/0275852).

In regard to claims 21, 28, and 35, Hong et al. describe a wearable device in the embodiment of a wearable watch for biometric monitoring. Figures 2a and 2b show a housing of the wearable device, wherein figure 2a shows the front surface and figure 2b depicts the rear surface. The housing is attached to a band for attaching to a user. The

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illustration in figure 2a is considered to describe a front surface opening of the housing with an electronics package and display, wherein the screen of the display is considered to comprise a front cover and front exterior surface. The display may include capacitive touch detection to make the display touch sensitive (para 239, 272, and 280). Figure 2b depicts the rear portion of the wearable device with a second opening in which an optical sensor is located. The optical sensor has a rear cover that is optically transparent (para 145, 146, and 155) and defines a protruding convex exterior surface at the sensor (para 153 and 154). The optical sensor is configured as a PPG biosensor which measures a heart rate (para 36, 37, 39, and 136-156). This input from this sensor would comprise a first physiological signal. Hong et al. also contemplates that other types of sensors may be incorporated with the wearable device. Such sensors are found in Table 1 (para 110), wherein such additional sensors include ECG and galvanic skin conductance electrodes (para 110 and 186). The input from these sensors is considered to comprise a second physiological signal. This contemplation is considered suggestive to one of ordinary skill in the art the combination of the additional sensors within the wearable device. It is also considered that one of ordinary skill in the art would readily recognize that the skin conductance and ECG sensors necessarily require electrodes for proper functioning and signal measurement. Hong et al. does fail to suggest is that the electrodes for such sensors may be located on the rear portion of the housing. Instead, Hong et al. teaches that skin conductance electrodes may be mounted on the strap. However, this difference merely pertains to the location of the electrode sensors, not to the function. The function of the sensors is independent of location, whether in the housing or on the band the sensors would function in the same

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manner and provide the same data. Thus, the location of the sensor, as long as it contacts the skin, does not affect or influence the operation of the sensor and presents little critical structure. Therefore it is considered to have been obvious to one of ordinary skill in the art at the time of the invention to modify Hong et al. to include electrode sensors for either galvanic skin conductance or ECG because the reference explicitly suggests the addition. The modification in this case would pertain to the combination of prior art elements as conventionally known to yield predictable results. Additionally, modifying Hong et al. to include such sensors on the housing as opposed to the attachment band is considered to have been obvious to one of ordinary skill in the art since the modification would pertain to rearranging the location of working elements, wherein the rearranged location would continue to provide similar measurements from such sensors.

In regard to claim 22, Hong et al. includes an attachment band as shown in figure 2A. The optical sensor of Hong et al. is configured as a PPG sensor to measure heart rate (para 36, 37, 39, and 136-156). Further, as discussed, Hong et al. suggests incorporation of additional sensors which may be used to measure ECG signals ((para 110 and Table 1). The ECG sensor proposed by Hong et al. would comprise a second physiological signal.

In regard to claim 26, as discussed, Hong et al. suggests incorporation of additional sensors which may be used to measure galvanic skin conductance (para 186). The galvanic skin conductance sensor proposed by Hong et al. would comprise a second physiological signal.

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In regard to claims 29 and 39, the rear side of Hong et al., as depicted in figure 2b, includes a convex portion which is considered to define a convex exterior surface (para 153-154).

In regard to claim 30, the convex cover portion of Hong et al. includes an optically transparent window, such as a lens, for light transmission (para 153-154).

In regard to claim 33, the optical sensor of Hong et al. is configured as a PPG sensor to measure heart rate (para 36, 37, 39, and 136-156). This signal is considered to comprise a first physiological signal.

In regard to claim 35, as discussed, Hong et al. suggests incorporation of additional sensors which may be used to measure ECG signals ((para 110 and Table 1). The ECG sensor proposed by Hong et al. would comprise a second physiological signal. Additionally, one of ordinary skill in the art is considered to readily recognize that such sensor requires at least one electrode for proper operation and measurement.

In regard to claim 40, figure 4b of Hong et al. shows the optical sensor configuration comprising an optical light emitter in the form of LEDs and an optical sensor in the form of a photodetector for receiving reflected portions of light from the target vein. The light is transmitted and reflected through a convex optical lens.

10. Claim 34 is/are rejected under 35 U.S.C. 103 as being unpatentable over Hong et al. (US Publication no. 2014/0275852) in view of Memering et al. (US Publication no. 2015/0085429).

In regard to claim 34, Hong et al. is considered to substantially suggest the invention as claimed, including a convex cover portion comprising an optically

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transparent window, such as a lens, for light transmission (para 153-154). However, Hong et al. does not teach that the lens material is sapphire. Memering et al. teaches that sapphire is a suitable transparent material for manufacturing as a cover and as improved resistance to scratches and damage (abstract and para 5, 20 ,26). In view of these properties, sapphire is considered a suitable material for the claimed intended use. Therefore, modification of Hong et al. to use sapphire for the convex covering of the optical sensor is considered to have been obvious to one of ordinary skill in the art since Memering et al. teaches the suitability of the material for the intended use, and it has been held by the reviewing courts that where the selection of a preferred material for an intended use only requires routine skill in the art.

11. Claims 23, 24, 31, 32, and 36 is/are rejected under 35 U.S.C. 103 as being unpatentable over Hong et al. (US Publication no. 2014/0275852) in view of Lo et al. (US Patent no. 5,738,104).

In regard to claims 23, 24, 31, 32, and 36, Hong et al. is considered to substantially suggest a wrist wearable sensor that may include electrodes for sensing ECG or galvanic skin conductance signals. However, Hong et al. does not teach that the ECG is signal measuring portion includes a first, second, and third electrode. Lo et al. show a wrist based monitor for ECG and heart rate that utilizes a three contact approach for measuring ECG. The three contact approach uses three electrodes which are connected to differential amplifiers in order to suppress common mode noise (col Three electrodes are considered to be conventional for ECG measurements. Therefore modification of the suggested ECG and/or galvanic skin response electrodes in Hong et

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al. to include at least three electrodes is considered to have been obvious to one of ordinary skill in the art at the time of the invention since the modification would pertain to the application of a conventional technique for acquiring ECG signals to a known device to yield predictable results.

12. Claims 25, 27, and 38 is/are rejected under 35 U.S.C. 103 as being unpatentable over Hong et al. (US Publication no. 2014/0275852) in view of Ikegami (US Patent no. 4,274,152).

In regard to claims 25, 27, and 38, Hong et al. is considered to substantially suggest the invention as claimed, however does not teach an input mechanism that permits rotational and translation motion as an input form, mounted on the side of the watch housing. Ikegami shows a wrist watch and demonstrates it is common to set watch settings using a setting mechanism (such as crown or winding stem) located on the side of the watch housing and configured for rotational and axial translational setting motion (col 4 lines 18-40). The rotational and translational crown is considered a conventional structural element for enabling input on a watch to provide setting selection and adjustment. Modification of Hong et al. to include a rotational and translational input setting mechanism is considered to have been obvious to one of ordinary skill in the art at the time of the invention since it would pertain to the application of a known element and technique conventionally utilized in the watch art to enable setting adjustment to a similarly known device to yield a predictable result.

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Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN T GEDEON whose telephone number is (571)272-3447. The examiner can normally be reached M-F 8:00 am to 5:30 PM ET.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl H Layno can be reached on 571-272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN T GEDEON/
Primary Examiner, Art Unit 3792
18 April 2022

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Inventor(s): Fletcher R. Rothkopf et al.	
App. No.: 17/672,653	Con. No.: 5302
Filed: February 15, 2022	Art Unit: 3792
Title: WEARABLE ELECTRONIC DEVICE	Examiner: Brian T. Gedeon

AMENDMENT AND RESPONSE TO OFFICE ACTION

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

In response to the Office action dated April 20, 2022, please consider the following remarks and amend the above-identified application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 7 of this paper.

Amendments to the Claims:

1. – 20. (Cancelled)

21. (Currently Amended) A wearable electronic device comprising:
a housing defining a first opening and a second opening;
a display positioned at least partially within the first opening;
a front cover positioned over the display and defining at least a portion of a front exterior surface of the wearable electronic device; and
a biosensor module comprising:
a rear cover positioned at least partially within the second opening and defining an optically transparent window and a protruding convex surface;
an optical sensor aligned with the optically transparent window;
a first electrode positioned along a rear surface of the wearable electronic device; and
a second electrode positioned along the rear surface of the wearable electronic device; and
a third electrode positioned along a side of the wearable electronic device, wherein:
the wearable electronic device is configured to measure a first physiological parameter of a wearer using the optical sensor; and
the wearable electronic device is configured to measure a second physiological parameter using the first electrode, [[and]] the second electrode, and the third electrode.

22. (Previously Presented) The wearable electronic device of claim 21, wherein:
the wearable electronic device further includes a watch band coupled to the housing and configured to couple the wearable device to a wearer;
the optical sensor is a heart-rate sensor;
the first electrode is an electrode of an electrocardiograph sensing system; and
the second parameter is an electrocardiogram.

23. (Cancelled)

24. (Cancelled)

25. (Previously Presented) The wearable electronic device of claim 21, further comprising an input device positioned along a side of the housing and configured to receive at least one of a rotational input or a translational input.

26. (Previously Presented) The wearable electronic device of claim 21, wherein the second physiological parameter is a galvanic skin response.

27. (Previously Presented) The wearable electronic device of claim 21, further comprising an input device positioned along a side of the housing and configured to receive at least one of a rotational input or a translational input.

28. (Currently Amended) An electronic watch comprising:

a display;

a housing at least partially enclosing the display;

a front cover positioned over the display and defining at least a portion of a front exterior surface of the electronic watch;

a biosensor module defining at least a portion of a rear exterior surface of the electronic watch opposite the front exterior surface, the biosensor module comprising:

a rear cover defining an optically transparent window;

an optical sensor positioned below the optically transparent window;

a first electrode positioned along the rear exterior surface of the electronic watch; and

a second electrode positioned along the rear exterior surface of the electronic watch; and

a third electrode positioned along a side of the electronic watch, wherein:

the electronic watch is configured to measure a first physiological parameter of a wearer using the optical sensor; and

the electronic watch is configured to measure a second physiological parameter using the first electrode, [[and]] the second electrode, and the third electrode.

29. (Previously Presented) The electronic watch of claim 28, wherein the rear cover defines a convex exterior surface.

30. (Previously Presented) The electronic watch of claim 29, wherein the optically transparent window is located within a portion of the rear cover that defines the convex exterior surface.

31. (Cancelled)

32. (Currently Amended) The electronic watch of claim 28 [[31]], wherein the first electrode, the second electrode, and the third electrode are part of an electrocardiograph sensing system.

33. (Previously Presented) The electronic watch of claim 28, wherein the first physiological parameter is a heart rate.

34. (Previously Presented) The electronic watch of claim 28, wherein the rear cover comprises sapphire.

35. (Currently Amended) A wearable electronic device comprising:
a housing;
a band attached to the housing and configured to couple the wearable electronic device to a user;
a touch-sensitive display positioned at least partially within the housing;
a rear cover positioned at least partially within a rear opening defined along a rear portion of the housing, the rear cover defining at least a portion of a rear exterior surface of the wearable electronic device and having an optically transparent portion;
an optical sensor positioned within the housing and configured to emit an optical signal through the optically transparent portion;
a first electrode positioned along the rear exterior surface of the wearable electronic device; [[and]]
a second electrode positioned along the rear exterior surface of the wearable electronic device; and
a third electrode positioned along a side of the wearable electronic device, wherein:
the wearable electronic device is configured to measure a first physiological parameter using the optical sensor; and

the wearable electronic device is configured to measure a second physiological parameter using the first electrode, ~~[[and]] the second electrode, and the third electrode.~~

36. (Cancelled)

37. (Currently Amended) The wearable electronic device of claim 35, wherein:
the first electrode, ~~[[and]] the second electrode, and the third electrode~~ are part of an electrocardiograph sensing system; and
the second physiological parameter is an electrocardiogram.

38. (Previously Presented) The wearable electronic device of claim 35, further comprising an input device positioned along a side of the housing and configured to receive at least one of a rotational input or a translational input.

39. (Previously Presented) The wearable electronic device of claim 35, wherein the rear cover defines a convex exterior surface.

40. (Previously Presented) The wearable electronic device of claim 35, wherein the optical sensor comprises:
an optical emitter configured to emit the optical signal through the optically transparent portion; and
an optical receiver configured to receive a reflected portion of the optical signal through the rear cover.

41. (New) The wearable electronic device of claim 21, wherein the optical sensor comprises:
an optical emitter configured to emit the optical signal; and
an optical receiver configured to receive a reflected portion of the optical signal.

42. (New) The wearable electronic device of claim 41, wherein:
the optical emitter is a first optical emitter configured to emit light having a first wavelength; and
the optical sensor further comprises a second optical emitter configured to emit light having a second wavelength different from the first wavelength.

43. (New) The wearable electronic device of claim 21, further comprising an input device positioned along a side of the housing and configured to receive a rotational input and a translational input.

44. (New) The wearable electronic device of claim 21, further comprising a wireless charging system configured to receive power wirelessly, from an external charging dock, through the rear exterior surface of the electronic watch.

REMARKS

This paper is submitted in response to the Office action mailed on April 20, 2022. This paper amends claims 21, 28, 32, 35, and 37, cancels claims 23-24, 31, and 36, and adds claims 41-44. The amendments and arguments presented herein, as well as any claim cancellations, are made solely for the purpose of advancing prosecution, and do not indicate acquiescence to the rejections or to any characterizations of the cited references or the instant claims. Moreover, all amendments and remarks herein are made without prejudice to, disclaimer of, or dedication of any subject matter, and a right is specifically reserved to file continuation and/or divisional applications claiming any subject matter disclosed in the application.

After entry of this Amendment and Response, claims 21-22, 25-30, 32-35, and 37-44 will be pending.

I. Claim Objections

Claims 24 and 27 are objected to because of certain informalities. Appropriate correction has been made. Claims 24 and 27 have been cancelled, rendering the rejection of these claims moot. The Assignee respectfully requests that the rejection be withdrawn.

II. Claim Rejections Under 35 U.S.C. § 103

Claims 21, 22, 26, 28-30, 33-35, 37, 39, and 40 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Publication No. 2014/0275852 to Hong et al. (hereinafter “Hong”). These claims are believed to be patentable at least because Hong does not teach or suggest all the limitations of the amended independent claims.

Amended claim 21 recites (emphasis added):

A wearable electronic device comprising:
a housing defining a first opening and a second opening;
a display positioned at least partially within the first opening;
a front cover positioned over the display and defining at least a portion of a front exterior surface of the wearable electronic device; and
a biosensor module comprising:
a rear cover positioned at least partially within the second opening and defining an optically transparent window and a protruding convex surface;
an optical sensor aligned with the optically transparent window;

a first electrode positioned along a rear surface of the wearable electronic device; and

a second electrode positioned along the rear surface of the wearable electronic device; and

a third electrode positioned along a side of the wearable electronic device, wherein:

the wearable electronic device is configured to measure a first physiological parameter of a wearer using the optical sensor; and

the wearable electronic device is configured to measure a second physiological parameter using the first electrode, the second electrode, and the third electrode.

Thus, amended claim 21 recites a wearable electronic device with “a first electrode **positioned along a rear surface** of the wearable electronic device,” “a second electrode **positioned along the rear surface of the wearable electronic device**,” and “a third electrode **positioned along a side of the wearable electronic device**.” Thus, claim 21 recites a wearable electronic device with at least three electrodes, with two electrodes “positioned along the rear surface of the wearable electronic device” and a third “positioned along a side of the wearable electronic device.” Thus, for example, the first and second electrodes “make contact with the skin of the user’s wrist when the device is being worn” while the third electrode can be contacted by a user’s finger, such as “when the user pinches the device 100 between two digits.” Specification as filed, ¶ 196.

The Office action acknowledges that Hong “fail[s] to suggest [] that the electrodes for such sensors may be located on the rear portion of the housing,” and is not cited for and does not describe “a third electrode positioned along a side of the wearable electronic device,” as recited by amended claim 21. Rather, Hong describes that “galvanic skin response electrodes may be hidden in the band.” Hong, ¶ 186. Thus, Hong fails to describe the particular configuration of the electrodes as claimed in amended claim 21.

Moreover, it would not be obvious to a person of ordinary skill in the art to modify Hong to move the electrodes from being “hidden in the band” to the locations recited in amended claim 21. For example, in the context of wearable electronic devices, such as watches, health monitoring devices, and the like, the integration of sophisticated electronic systems, such as those that interact with the human body for physiological measurements, is a complex engineering task. Components of such systems, such as skin-contacting electrodes, cannot simply be moved to another location without incurring significant engineering challenges. For example, in the case of Hong, moving electrodes from a band to a rear and a

side of the device would require significant reengineering of the “portable monitoring device,” including its existing optical sensor. Nor would one of ordinary skill in the art have a reasonable expectation that the modification could be performed successfully without impacting the operation of the device (e.g., negatively affecting the operation of the electrodes and associated sensors, the optical sensing system, etc.). Accordingly, such modification is not obvious to one of ordinary skill in the art.

Further, while Lo (cited against dependent claim 23, for example) describes a “heart rate monitor” with “three electrodes,” the arrangement of Lo’s electrodes is different from that of amended claim 21. In particular, Lo describes a digital watch in which “[t]wo electrical contacts 14 and 16 are placed on the front of the watch for the user to place his or her fingers on when the pulse mode is entered” and “[a] third electrical contact is located on the back side of the watch.” Thus, Lo does not describe any electrical contacts “positioned along a side of the wearable electronic device,” nor does it describe two electrodes “positioned along the rear surface of the wearable electronic device,” as recited by amended claim 21. Even assuming for the sake of argument that one of ordinary skill in the art were to combine Lo with Hong, the combination would still fail to teach or suggest the device of claim 21, as the electrodes would have a completely different physical arrangement than claim 21. One of ordinary skill in the art would also not find it obvious to rearrange Lo’s electrodes to meet the arrangement recited in claim 21, as there is no teaching or suggestion in any of the references of the claimed arrangement, let alone any suggestion that the rearrangement could be undertaken without encountering significant engineering challenges or without impacting the functioning of the device.

Amended claim 21 is therefore believed to be allowable, along with its dependent claims, over the rejection of record. Amended independent claims 28 and 35 are believed to be patentable, along with their respective dependent claims, for the same or similar reasons as those described above with respect to claim 21. The Assignee therefore respectfully requests the withdrawal of the § 103 rejection of claims .

Claim 34 is rejected under 35 U.S.C. § 103 as being unpatentable over Hong, in view of U.S. Publication No. 2015/0085429 to Memering et al. (hereinafter “Memering”).

Claims 23, 24, 31, 32, and 36 are rejected under 35 U.S.C. § 103 as being unpatentable over Hong, in view of U.S. Patent No. 5,738,104 to Lo et al. (hereafter “Lo”).

Claims 25, 27, and 38 are rejected under 35 U.S.C. § 103 as being unpatentable over Hong, in view of U.S. Patent No. 4,274,152 to Ikegami et al. (hereafter “Ikegami”).

Thus, claims 23-25, 27, 31-32, 34, 36, and 38 are rejected based on Hong in view of one or more additional references. Claims 23-24, 31, and 36 are cancelled, rendering the rejection of these claims moot. Claims 25, 27, 32, 34, and 38 each depend from independent claims 21, 28, or 35, and are believed to be allowable at least insofar as the claims depend from patentably distinct base claims. Accordingly, the Assignee submits that dependent claims 25, 27, 32, 34, and 38 are in condition for allowance. The Assignee makes this statement without waiving and without reference to any independent bases of patentability within the claims and thus reserves the right to argue such bases in a future paper if necessary.

III. Conclusion

The Assignee thanks the Examiner for the thorough review of the application. The Assignee respectfully submits the present application, as amended, is in condition for allowance and respectfully requests the issuance of a Notice of Allowability as soon as practicable.

The Assignee believes no fees or petitions are due with this filing. However, should any such fees or petitions be required, please consider this a request therefor and authorization to charge Deposit Account No. 504621 as necessary.

If the Examiner should require any additional information or amendment, please contact the undersigned attorney.

Dated: July 20, 2022_____

Respectfully submitted,

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